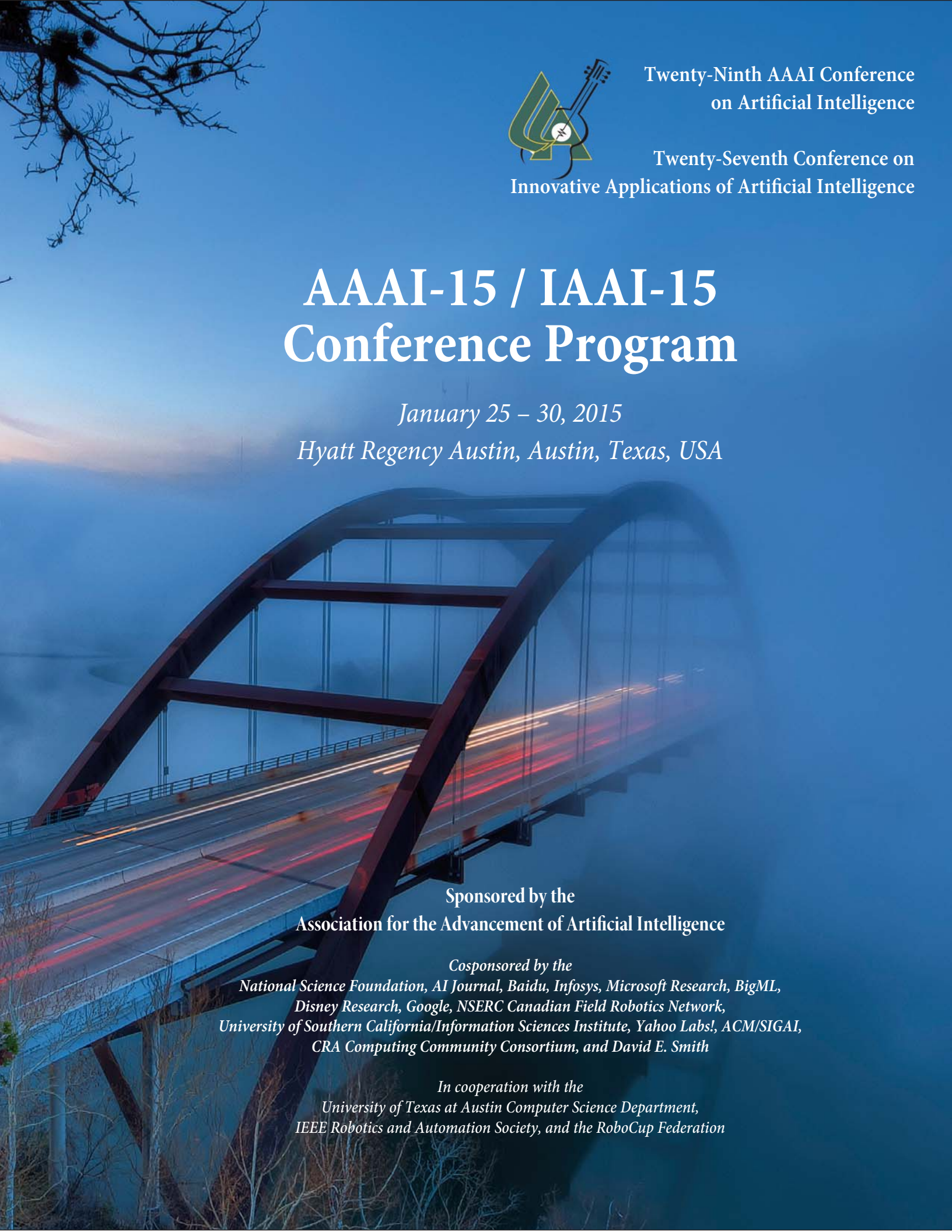

Twenty-Ninth AAAI Conference
on Artificial Intelligence

Twenty-Seventh Conference on
Innovative Applications of Artificial Intelligence

AAAI-15 / IAAI-15
Conference Program

January 25 – 30, 2015

Hyatt Regency Austin, Austin, Texas, USA

Sponsored by the
Association for the Advancement of Artificial Intelligence

Cosponsored by the
National Science Foundation, AI Journal, Baidu, Infosys, Microsoft Research, BigML, Disney Research, Google, NSERC Canadian Field Robotics Network, University of Southern California/Information Sciences Institute, Yahoo Labs!, ACM/SIGAI, CRA Computing Community Consortium, and David E. Smith

In cooperation with the
University of Texas at Austin Computer Science Department, IEEE Robotics and Automation Society, and the RoboCup Federation

Morning	Afternoon	Evening
	Sunday, January 25	
Tutorial Forum Workshops / NSF Workshop AAAI/SIGAI DC	Student Newcomer Lunch Tutorial Forum Workshops / NSF Workshop AAAI/SIGAI DC	
	Monday, January 26	
Tutorial Forum Workshops AAAI/SIGAI DC Open House Robotics / RoboCup	Tutorial Forum Workshops AAAI/SIGAI DC Open House Invited Talks Robotics / RoboCup	Speed Dating Opening Reception
	Tuesday, January 27	
AAAI / IAAI Welcome / AAAI Awards Invited Talks: Bagnell and Etzioni AAAI / IAAI Technical Program Funding Information Session Robotics / RoboCup / Exhibits	AAAI / IAAI Technical Program Senior Member Blue Sky / What's Hot Talks / RSS Talks Robotics / RoboCup / Exhibits General Game Playing	Shaky Celebration Poster / Demo Session 1 Doctoral Consortium, Virtual Agent Demos Robotics Demos Fellows Dinner
	Wednesday, January 28	
Women's Mentoring Breakfast AAAI / IAAI Technical Program Senior Member Blue Sky / What's Hot Talks Classic Paper / Robotics Students Robotics / Exhibits	Student Abstract Poster Ads / Lunch with a Fellow AAAI / IAAI Technical Program Invited Talks: Hinton and Ghani Senior Member Summary Talks General Game Playing Robotics / Exhibits	AAAI Community Meeting Poster / Demo Session 2 Student Abstract Posters Games Showcase, Robotics Demos Easily Accessible Papers Game Night
	Thursday, January 29	
Invited Talks: Sellmann AAAI / IAAI Technical Program What's Hot Talks Robotics / Exhibits	Student Abstract Poster Ads / Lunch with a Fellow AI Video Competition Awards AAAI / IAAI Technical Program RSS / Robotics Student Talks General Game Playing Robotics / Exhibits	Debate on Autonomous Weapons Poster / Demo Session 3 Student Abstract Posters Games Showcase Easily Accessible Papers Robotics Demos
	Friday, January 30	
Invited Talks: Getoor and Bowling AAAI-15 Awards Ceremony AAAI / Technical Program Senior Member Summary Talks		

Contents

Sponsoring Organizations

AAAI gratefully acknowledges the generous contributions of the following organizations and individuals to AAAI-15:

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In Cooperation Organizations

University of Texas at Austin Computer Science Department
IEEE Robotics and Automation Society (RAS)
RoboCup Federation

Acknowledgments

The Association for the Advancement of Artificial Intelligence acknowledges and thanks the following individuals for their generous contributions of time and energy to the successful creation and planning of the Twenty-Ninth AAAI Conference on Artificial Intelligence and the Twenty-Seventh Conference on Innovative Applications of Artificial Intelligence. (A complete listing of the AAAI-15 and IAAI-15 Program Committee members appears in the conference proceedings.)

AAAI Conference Committee

AAAI Conference Committee Chair

Shlomo Zilberstein (University of Massachusetts Amherst, USA)

AAAI-15 Program Cochairs

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Sven Koenig (University of Southern California, USA)

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David Gunning (PARC, USA)
Peter Z. Yeh (Nuance Communications, USA)

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Senior Member Track Cochairs

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Jérôme Lang (Université Paris Dauphine, France)

What's Hot Cochairs

Esra Erdem (Sabanci University, Turkey)
Michael Thielscher (University New South Wales, Australia)

Tutorial Cochairs

Emma Brunskill (Carnegie Mellon University, USA)
Mausam (Indian Institute of Technology, India)

Workshop Cochairs

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Daniel Lowd (University of Oregon, USA)

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Sebastian Sardina (RMIT, Australia)

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Matthew Taylor (Washington State University, USA)
David L. Roberts (North Carolina State University, USA)

General Student Activities and Outreach Cochairs

William Yeoh (New Mexico State University, USA)
Nathan Sturtevant (University of Denver, USA)

Women's Mentoring Breakfast

Marie desJardins (University of Maryland, Baltimore County, USA)
Amy McGovern (University of Oklahoma, USA)
Kiri Wagstaff (Jet Propulsion Laboratory, USA)

Demos Chair

Carlos Linares Lopez (Universidad Carlos III de Madrid, Spain)

Robotics Cochairs

George Konidaris (Massachusetts Institute of Technology, USA)
Brad Knox (Massachusetts Institute of Technology, USA)
Nick Hawes (University of Birmingham, UK)

Shakey Celebration Chair

Ben Kuipers (University of Michigan, USA)

RoboCup Exhibition Cochairs

Peter Stone (University of Texas, Austin, USA)
Daniel Lee (University of Pennsylvania, USA)

Computer Game Showcase

Robert Holte (University of Alberta, Canada)
Ryan Hayward (University of Alberta, Canada)
Nathan Sturtevant (University of Denver, USA)
Martin Mueller (University of Alberta, Canada)

General Game-Playing Competition

Bertrand Decoster (Stanford University, USA)
Michael Genesereth (Stanford University, USA)

Video Competition Cochairs

Sabine Hauert (Massachusetts Institute of Technology, USA)
Mauro Birattari (Universite Libre de Bruxelles, Belgium)

Virtual Agents Exhibit

Marc Cavazza (Teesside University, UK)

Fundraising Cochairs

Vasant Honavar (Penn State University, USA)
Sandip Sen (The University of Tulsa, USA)

Publicity and Social Media Chair

Yixin Chen (Washington University in St. Louis, USA)

Funding Information Session Cochairs

Berthe Choueiry (University of Nebraska-Lincoln, USA)
Sandip Sen (University of Tulsa, USA)

Debate on Autonomous Weapons Cochairs

Stuart Russell (University of California, Berkeley, USA)
Toby Walsh (NICTA and University of New South Wales, Australia)

AAAI-15 Advisory Board

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Peter Stone (University of Texas at Austin, USA)

Awards

AAAI Special Awards and honors will be presented Tuesday, January 27, 8:30 – 8:55 am, in Zilker Ballroom on the first level of the Hyatt Regency Austin. AAAI-15 Awards will be presented on Friday, January 30, 9:50 – 10:00 AM in the same location.

AAAI Special Awards and Honors

AAAI Honors and Special Awards will be presented by Manuela Veloso, Awards Committee Chair and AAAI Past President, Thomas Dietterich, AAAI President, and Subbarao Kambhampati, AAAI President-Elect.

2015 AAAI Fellows Recognition

Each year, the Association for the Advancement of Artificial Intelligence recognizes a small number of members who have made significant sustained contributions to the field of artificial intelligence, and who have attained unusual distinction in the profession. AAAI is pleased to announce the five newly elected Fellows for 2015, who will be honored during the annual Fellows dinner on Tuesday, January 27:

Rama Chellappa *(University of Maryland)*
Marco Dorigo *(Université Libre de Bruxelles)*
Holger H. Hoos *(University of British Columbia)*
Adele E. Howe *(Colorado State University)*
Thorsten Joachims *(Cornell University)*

Senior Member Recognition

AAAI is pleased to announce the 2015 AAAI senior members, who are being recognized for their long-term participation in AAAI and their distinction in the field of artificial intelligence.

Susan Craw *(Robert Gordon University, UK)*
Stan Franklin *(University of Memphis, USA)*
Yong Gao *(University of British Columbia Okanagan, Canada)*
Helen M. Gigley, Ph.D. *(Central Intelligence Agency (retired), USA)*
David B. Leake *(Indiana University, USA)*
Mausam *(Indian Institute of Technology Delhi, India)*
Yi L. Murphey *(University of Michigan Dearborn, USA)*
Leo J. Obrst *(The MITRE Corporation, USA)*
Doina Precup *(McGill University, Canada)*
David S. Touretzky *(Carnegie Mellon University, USA)*
Franz Wotawa *(Technische Universität Graz, Austria)*

Classic Paper Award

The 2015 AAAI Classic Paper award honors the following authors of paper(s) deemed most influential from the Fourteenth National Conference on Artificial Intelligence, held in 1997 in Providence, Rhode Island, USA.

2015 AAAI Classic Paper Award

Statistical Parsing with a Context-Free Grammar and Word Statistics
Eugene Charniak
For significant contributions to sentence parsing and language models based on probabilities of possible alternative parses.

The Classic Paper Award recipient Eugene Charniak will present a talk on Wednesday, January 28, at 9:20 am, Texas Ballroom I, second level.

Honorable Mention

Using CSP Look-Back Techniques to Solve Real-World SAT Instances
Roberto J. Bayardo Jr. and Robert C. Schrag
For significant contributions to enhance proof procedures for propositional satisfiability on large instances of real-world problems.

2015 Distinguished Service Award

The AAAI Distinguished Service award recognizes one individual each year for extraordinary service to the AI community. The 2015 recipient is Kenneth M. Ford, Florida Institute for Human and Machine Cognition, who is being recognized for his outstanding contributions to the field of artificial intelligence through sustained service, including the founding of the Florida Institute for Human and Machine Cognition (IHMC), leadership roles at NASA, and his work on the advisory boards of federal science and technology research organizations

2015 Feigenbaum Prize

The AAAI Feigenbaum Prize was established to recognize and encourage outstanding artificial intelligence research advances that are made by using experimental methods of computer science. The 2015 prize is being awarded to the Eric J. Horvitz, Microsoft Research, for sustained and high-impact contributions to the field of artificial intelligence through the development of computational models of perception, reflection and action, and their application in time-critical decision making, and intelligent information, traffic and healthcare systems. The Feigenbaum Prize is supported by a grant from the Feigenbaum Nii Foundation.

IAAI-15 Deployed Applications Awards

The six IAAI-15 Deployed Application Awards will be announced during the Opening Ceremony on Tuesday, January 27 by IAAI-15 Chair David Gunning and Cochair Peter Yeh. Certificates will be presented during paper sessions.

Activity Planning for a Lunar Orbital Mission
John L. Bresina

Robust System for Identifying Procurement Fraud
Amit Dhurandhar, Rajesh Ravi, Bruce Graves, Gopikrishnan Maniachari, Markus Ettl

Position Assignment on an Enterprise Level Using Combinatorial Optimization
Leonard Kinnaird-Heether, Chris Dorman

Graph Analysis for Detecting Fraud, Waste, and Abuse in Healthcare Data
Juan Liu, Eric Bier, Aaron Wilson, Tomo Honda, Sricharan Kumar, Leilani Gilpin, John Guerra-Gomez, Daniel Davies

Planned Protest Modeling in News and Social Media
Sathappan Muthiah, Bert Huang, Jaime Arredondo, David Mares, Lise Getoor, Graham Katz, Naren Ramakrishnan

Process Diagnosis System (PDS) - A 30 Year History
Edward D Thompson, Ethan Frolich, James C Bellows, Benjamin E Bassford, Edward J Skiko, Mark S Fox

AAAI-15 Awards

The AAAI-15 Awards will be presented by Program Cochairs Blai Bonet and Sven Koenig.

AAAI-15 Outstanding Paper Award

This year, AAAI's Conference on Artificial Intelligence honors the following two papers, which exemplify high standards in technical contribution and exposition by regular and student authors. In addition, the program committee selected one paper for honorable mention in each category, based on their overall high quality and outstanding contribution.

AAAI-15 Outstanding Paper Award

From Non-Negative to General Operator Cost Partitioning
Florian Pommerening, Malte Helmert, Gabriele Röger and Jendrik Seipp

Honorable Mention

Predicting the Demographics of Twitter Users from Website Traffic Data
Aron Culotta, Nirmal Kumar Ravi, Jennifer Cutler

AAAI-15 Outstanding Student Paper Award

Surpassing Human-Level Face Verification Performance on LFW with GaussianFace
Chaochao Lu and Xiaoou Tang

Honorable Mention

Sparse Bayesian Multiview Learning for Simultaneous Association Discovery and Diagnosis of Alzheimer's Disease
Shandian Zhe, Zenglin Xu, Yuan Qi and Peng Yu

AAAI-15 Blue Sky Idea Awards

AAAI, in cooperation with the Computing Research Association Computing Community Consortium (CCC), is pleased to present three Blue Sky Awards for papers that present ideas and visions that can stimulate the research community to pursue new directions, such as new problems, new application domains, or new methodologies. The recipients of the Blue Sky Idea travel awards, sponsored by the CCC, are as follows:

Sarit Kraus for Intelligent Agents for Rehabilitation and Care of Disabled and Chronic Patients

Michela Milano and Pascal Van Hentenryck for Emerging Architectures for Global System Science

Xiaojin Zhu for Machine Teaching: An Inverse Problem to Machine Learning and an Approach toward Optimal Education

Outstanding AAAI-15 Program Committee Members

Each year, AAAI recognizes several outstanding program committee and senior program committee members. These individuals have gone above and beyond the expectations for the role, showing exceptional judgment, clarity, knowledgeability, and leadership in reaching a consensus decision.

Outstanding Senior Program Committee Members

Vincent Conitzer (Duke University, USA)
Robert Holte (University of Alberta, Canada)
Francesca Rossi (University of Padova, Italy)

Outstanding Program Committee Members

Christopher Amato (Massachusetts Institute of Technology, USA)
Travis Mandel (University of Washington, USA)
Nicholas Mattei (NICTA and UNSW, Australia)
Ingo Pill (Graz University of Technology, Austria)
Erik Talvitie (Franklin & Marshall College, USA)
Paul Vernaza (Carnegie Mellon University, USA)
Xinhua Zhang (University of Alberta, Canada)

Audience Participation Awards

AAAI-15 will be making their final awards based on your feedback! You will have the opportunity to vote on the following awards during the course of the conference, the votes will be tallied, and the winners will be announced at the AAAI-15 Awards Ceremony at 9:50 AM on Friday, January 30. Stay tuned to the social media channels (see page 9) for more information about how to cast your vote for Best Demonstration, Best Poster, and Video Competition People's Choice awards.

Undergraduate Student Author Recognition

Special recognition certificates will be presented to authors of accepted AAAI-15 technical papers who are currently undergraduate students.

Social Events

Opening Reception

The AAAI-15 Opening Reception will be held Monday, January 26, 6:00 – 8:30 PM in the Gates-Dell Complex of the Computer Science Department at the University of Texas at Austin. In addition to the traditional opportunity to socialize, some lab tours will be available during the course of the evening. A variety of heavy hors d'oeuvres and one complimentary beverage will be served. A no-host bar will also be available. Admittance to the reception is included in the AAAI-15 technical registration. A $55.00 per person fee ($30.00 for children) will be charged for guests and other nontechnical conference registrants. AAAI has arranged for transportation to and from the reception. The first shuttle will depart from the curb in front of the main hotel entrance at 5:30 PM. (Participants in the speed dating event will be able to board shuttles to the event at 7:15 PM.) The final shuttle to the hotel will depart from the reception at 9:00 PM.

Poster / Demo Sessions

Zilker Ballroom	Tuesday, January 27, 7:15 – 8:45 PM Thursday, January 29, 6:45 – 8:15 PM	Wednesday, January 28, 6:30 – 8:00 PM

Each AAAI-15 poster / demo session will include posters by authors who presented poster ads that day (please see schedule for detail). In addition, a total of 21 technical demos will be divided among the three evening sessions. Tuesday evening will also include Doctoral Consortium posters and Virtual Agents demos. Wednesday and Thursday will include posters by student abstract authors who will present poster ads during the lunchtime session prior to their assigned poster session, as well as the Games Showcase. Robotic exhibits and demos will be held each evening. (For a listing of posters and exhibits, please see the technical schedule and detailed information elsewhere in this guide.) Attendees should also refer to the separate insert in their registration materials for an overview of the technical poster presentations. Additional detail is also available in the online schedule via Guidebook.

Poster / Demo sessions will include a supper buffet and a no-host bar. Admittance to the reception is included in the AAAI-15 registration. A $35.00 per person fee ($15.00 for children) will be charged for guests and other nontechnical conference registrants per night.

AAAI Speed-Dating

Monday, January 26, 6:00 PM – 7:00 PM, Zilker 3

Meet AAAI attendees from senior researchers to student newcomers! It's sure to be a great opportunity to network, and to receive or give mentoring and career advice. Doors open at 6:00 PM sharp. There will be no admittance after 6:10 PM, and admittance is on a first-come basis.

AAAI Games Night

Wednesday, January 28, 8:15 PM – 10:00 PM, Foothills II, 17th Floor. Please see page 10 for more information.

Special Events / Programs

AAAI Funding Information Session

Tuesday, January 27, 10:10 – 11:50 am, Texas VII

Following similar events at AAAI-06 and AAAI-13, attendees will have a chance to meet with United States funding agency program directors, who will touch on a variety of topics, such as current targets of funding initiatives and how to increase the success of your funding proposal. They will have suggestions on how to define the scope of your proposal, the type of research targeted, and the expectations for the outcome of the funded project. Panelists will include Iyer Purush (ARO), Benjamin Knott (AFOSR), Hector Munoz-Avila (NSF), Lynne Parker (NSF), and William Regli (DARPA). The program will conclude with a Q&A session. The session will be chaired by Sandip Sen.

Shakey Celebration

Tuesday, January 27, 5:45 – 7:15 PM, Texas Ballroom

Shakey the Robot, conceived fifty years ago, was a seminal contribution to AI. Shakey perceived its world, planned how to achieve a goal, and acted to carry out that plan. This was revolutionary. We gather to celebrate Shakey, and to gain insights into how the AI revolution moves ahead. The Shakey Celebration will include a panel with Ed Feigenbaum, Peter Hart, and Nils Nilsson, along with other highlights of this historic project.

AAAI Community Meeting

Wednesday, January 28, 5:30 – 6:30 PM, Texas Ballroom

AAAI welcomes all conference attendees to this inaugural AAAI community meeting, which will also serve as the AAAI Annual Business Meeting. Please join us as we explore current initiatives, and help chart the future course and objectives of AAAI.
Moderator: Thomas G. Dietterich, AAAI President

AAAI Debate on Autonomous Weapons

Thursday, July 29, 5:45 PM – 6:45 PM, Texas Ballroom

Participants: Ron Arkin (Georgia Institute of Technology) and Stephen Goose (Human Rights Watch)
Moderator: Thomas G. Dietterich (Oregon State University), AAAI President

Mankind is facing a step change in how wars will be fought as fully autonomous weapons are in the process of being developed that could be deployed in the field. The United Nations Convention on Certain Conventional Weapons (CCW) is considering an international ban on such weapons. The debate serves as part of a process by which the AI community might form and voice its opinion on such matters.

Ronald C. Arkin is a regents' professor, director of the Mobile Robot Laboratory, and associate dean for Research in the College of Computing at Georgia Tech. His research interests include behavior-based reactive control and action-oriented perception for mobile robots and unmanned aerial vehicles, hybrid deliberative/reactive software architectures, robot survivability, multiagent robotic systems, biorobotics, human-robot interaction, robot ethics, and learning in autonomous systems. His latest book is *Governing Lethal Behavior in Autonomous Robots.* Arkin is the series editor for The MIT Press book series Intelligent Robotics and Autonomous Agents. He has provided expert testimony to the United Nations, the International Committee of the Red Cross, the Pentagon and others on Autonomous Systems Technology. Arkin served on the Board of Governors of the IEEE Society on Social Implications of Technology, the IEEE RAS AdCom, and is founding cochair of IEEE RAS TC on Robot Ethics. He is a distinguished lecturer for the IEEE Society on social implications of technology and a Fellow of the IEEE.

Stephen Goose, executive director of Human Rights Watch's Arms Division, was instrumental in bringing about the 2008 convention banning cluster munitions, the 1997 treaty banning antipersonnel mines, the 1995 protocol banning blinding lasers, and the 2003 protocol requiring clean-up of explosive remnants of war. He and Human Rights Watch cofounded the International Campaign to Ban Landmines (ICBL), which received the 1997 Nobel Peace Prize. Goose created the ICBL's Landmine Monitor initiative, the first time that nongovernmental organizations around the world have worked together in a sustained and coordinated way to monitor compliance with an international disarmament or humanitarian law treaty. In 2013, he and Human Rights Watch cofounded the Campaign to Stop Killer Robots. Before joining Human Rights Watch in 1993, Goose was a US congressional staffer and a researcher at the Center for Defense Information. He has a master's degree in International Relations from the Johns Hopkins School of Advanced International Studies and a BA in History from Vanderbilt University.

Panel: Competitions: Do They Help Advance AI Research?

Thursday, July 29, 9:00 – 9:50 AM, Texas Ballroom

Participants: Michael Bowling (University of Alberta), Koen Hindriks (TU Delft), Claude Sammut (UNSW Australia), and Sven Wachsmuth (Bielefeld University). *Moderator:* Michael Thielscher (University of New South Wales)

Special Meetings

AAAI Community Meeting / Annual Business Meeting

Please join us for the AAAI community meeting and annual business meeting! We invite you to join the AAAI Executive Council members, and bring your thoughts and ideas for the future of AAAI! The meeting will be held Wednesday, January 28, 5:30 - 6:30 PM in Texas Ballroom I. Everyone is welcome!

AAAI Conference Committee Meeting

AAAI Conference Committee Meeting will be held Thursday, January 29, 7:45 - 8:45 AM, Padre Island, 2nd Level.

AAAI Executive Council Meeting

The AAAI Executive Council Meeting will be held Monday, January 26, 9:00 AM - 4:00 PM, Foothills II, 17th Floor. Continental breakfast will be available at 8:30 AM.

AAAI Futures Focus Group

The AAAI Futures Focus Group Meeting will be held Thursday, January 29, 10:00 AM – 4:00 PM, Padre Island, 2nd Level.

AAAI Press Conference

The AAAI Press Conference will be held Tuesday, January 27, 11:00 AM – 12:00 PM, Padre Island, 2nd Level.

AAAI Publications Committee Meeting

The AAAI Publications Committee Meeting will be held Wednesday, January 28, 7:45 – 8:45 AM, Padre Island, 2nd Level.

AI Magazine Editorial Board Meeting

The AI Magazine Editorial Board Meeting will be held Tuesday, January 27, 12:00 - 1:00 PM, Foothills II, 17th Floor.

IJCAI Executive Board Meeting

The IJCAI Executive Board Meeting will be held Wednesday, January 28, 8:30 – 11:30 AM, Foothills II, 17th Floor.

Tutorial Forum

AAAI-15 technical registrants may attend 4-5 consecutive tutorials. Tutorials are 4 hours unless noted otherwise.

Sunday, January 25
9:00 AM – 1:00 PM

SA1: A Beginner's Introduction to Heuristic Search Planning
Malte Helmert, Gabriele Röger
Zilker 2, First Level

SA2: Natural Language Processing in Watson
James Fan, Ken Barker
Zilker 4, First Level
(9:00 AM – 12:30 PM)

SA3: Neuroevolution Reinforcement Learning
Risto Miikkulainen
Texas I, Second Level

SA4: Probabilistic Programming with Figaro
Avi Pfeffer, Brian Ruttenberg
Texas III, Second Level
(9:00 AM – 1 PM, 2 – 4:00 PM)

Sunday, January 25
2:00 PM – 6:00 PM

SP1: Computing Game-Theoretic Solutions
Vincent Conitzer
Zilker 4, First Level

SP2: Data Analytics with Electronic Health Records
Fei Wang
Zilker 2, First Level

SP3: How to Be a PhD Student
Eugene C. Freuder
Texas III, Second Level
(4:30 PM – 6:00 PM)

SP4: Human-in-the-Loop Planning and Decision Support
Subbarao Kambhampati, Kartik Talamadupula
Texas I, Second Level

Monday, January 26
9:00 AM – 1:00 PM

MA1: AI for Smarter Cities. Hype or Reality?: A Study in Dublin, Bologna, Miami, and Rio
Pascal Hitzler, Freddy Lecue, Raghava Mutharaju, Jeff Z. Pan, Jiewen Wu
Zilker 4, First Level

MA2: Constraint-Based Temporal Reasoning
Roman Barták, Robert A. Morris, K. Brent Venable
Texas III, Second Level

MA3: Robocup
Dan Lee, Claude Sammut, Luca Iocchi
Foothills II, 17th Floor

MA4: Submodularity in Machine Learning Applications
Jeff Bilmes
Texas I, Second Level

Monday, January 26
2:00 PM – 6:00 PM

MP1: Artificial Intelligence and Technological Unemployment
Moshe Vardi
Texas III, Second Level
(2:00 PM – 3:45 PM)

MP2: Generalizing Optimization to Equilibration: A New Foundation for AI in the 21st Century
Sridhar Mahadevan
Zilker 4, First Level

MP3: Robot Learning from Demonstration
Scott Niekum, Sonia Chernova, Andrea Thomaz
Texas I, Second Level

MP4: Semantic Parsing with Combinatory Categorial Grammars
Yoav Artzi, Nicholas FitzGerald, Luke Zettlemoyer
Foothills II, 17th Floor

MP5: Voting Rules for AI
Toby Walsh, K. Brent Venable, Francesca Rossi
Texas III, Second Level
(4:15 PM – 6:00 PM)

Workshop Program

Registration for a workshop requires a supplemental fee for AAAI-15 technical registrants. Individuals who do not wish to participate in any other AAAI-15 programs or events may elect the workshop only registration fee. Electronic copies of technical report papers have been circulated to preregistrants.

Sunday, January 25

W1: AI and Ethics
Hill Country A
8:45 AM – 6:00 PM
6:00 PM – 7:00 PM, Texas VI: Joint session with W6

W2: AI for Cities
Hill Country B
8:45 AM – 5:30 PM

W5: Artificial Intelligence Applied to Assistive Technologies and Smart Environments
Hill Country C
8:45 AM – 4:30 PM

W6: Beyond the Turing Test
Texas VI (lunch in Texas VII)
8:30 AM – 6:00 PM
6:00 PM – 7:00 PM: Joint session with W1

W12: Planning, Search, and Optimization
Texas V
8:30 AM – 6:00 PM

W14: Scholarly Big Data: AI Perspectives, Challenges, and Ideas
Big Bend C/D
9:15 AM – 5:00 PM

W15: Trajectory-Based Behavior Analytics
Big Bend A/B
9:15 AM – 4:30 PM

W17: Knowledge, Skill, and Behavior Transfer in Autonomous Robots
Hill Country D
8:30 AM – 6:00 PM

NSF-Sponsored Workshop on Research Issues at the Boundary of AI and Robotics
Zilker 3, First Level
9:00 AM – 5:00 PM
This NSF-Sponsored Workshop is a cooperation between AAAI and the IEEE Robotics and Automation Society that brings together AI and robotics experts to compile a list of recommendations to funding agencies, professional organizations and individual researchers for how to push the boundary of AI and robotics. The resulting road-map will be made available to the public via the world wide web as well as distributed to funding agencies and within AAAI and IEEE RAS. After a community-wide invitation was issued, interested parties were preregistered. No onsite registration is available.

Monday, January 26

W3: AI for Transportation: Advice, Interactivity and Actor Modeling
Hill Country A
9:00 AM – 5:00 PM

W4: Algorithm Configuration
Hill Country B
8:45 AM – 6:00 PM

W7: Computational Sustainability
Texas VI
9:00 AM – 5:30 PM

W8: Computer Poker and Imperfect Information
Hill Country D
9:45 AM – 5:30 PM

W9: Incentive and Trust in E-Communities
Big Bend A/B
9:15 AM – 12:30 PM

W11: Multiagent Interaction without Prior Coordination
Hill Country C
9:00 AM – 5:00 PM

W16: World Wide Web and Public Health Intelligence
Big Bend C/D
9:00 AM – 5:20 PM

W18: Learning for General Competency in Video Games
Texas V
9:00 AM – 5:30 PM

Invited Talks

AAAI-15 and IAAI-15 Invited Talks will be held in two parallel sessions Tuesday, January 27 – Friday, January 30. The times and locations are included below. For special event plenary sessions, please see page 6.

Tuesday, 8:30 - 8:55 AM, Zilker Ballroom

AAAI-15 / IAAI-15 Welcome and Opening Remarks

AAAI Organizational Awards/Honors

AAAI-15 / IAAI-15 Program Chairs

Tuesday, 9:00 AM – 9:50 AM, Texas Ballroom I–III

AAAI-15 Invited Talk

Artificial Intelligence, Machine Learning and Robotics: Interplay and Interaction

Drew Bagnell (Carnegie Mellon University)
Introduction by Michael Beetz

My talk will focus on theoretical and algorithmic ideas in machine learning and AI, and their origin in problems of robotics. Much of my talk will focus on no-regret online learning methods in machine learning and the critical role of interaction for learning in robotics. I will highlight the tremendous impact robotics has had in identifying key learning problems and suggesting algorithmic techniques; additionally, I'll consider the remarkable tools that have been developed within AI and learning to address hard robotics problems. I'll discuss a variety of machine learning techniques of increasing sophistication from the most familiar classification problems, to structured prediction, and to imitation learning. I will also address how to make reinforcement learning and learning control practical in robotics. Throughout, we will look at case studies in learning dexterous manipulation, activity forecasting of drivers and pedestrians, and imitation learning of robotic locomotion and rough-terrain navigation. These case studies highlight key challenges in applying AI and learning algorithms in practical settings.

Tuesday, 9:00 AM – 9:50 AM, Zilker Ballroom

AAAI-15/IAAI-15 Joint Invited Talk

You Can't Play 20 Questions with Nature and Win

Oren Etzioni
(Allen Institute for Artificial Intelligence)
Introduction by David Gunning

The machine learning paradigm, and deep learning methods in particular, have achieved phenomenal results in recent years. We need to leverage and extend these methods to address grand AI challenges such as the automated acquisition of common-sense knowledge, and machine reading of text. My talk will describe the ambitious research program at the Allen Institute of AI (AI2), which aims to address these challenges in collaboration with the AI community. I will describe our key projects: Aristo — which learns from textbooks and reasons over learned knowledge to answer standardized test questions, and Semantic Scholar — which aims to utilize AI methods to revolutionize the search for academic papers.

Wednesday, 1:40 - 2:30 PM, Zilker Ballroom

AAAI-15 Invited Talk

Deep Learning

Geoffrey Hinton
(University of Toronto and Google Inc)
Introduction by Stuart Russell

I will give a brief history of deep learning explaining what it is, what kinds of task it should be good for and why it was largely abandoned in the 1990's. I will then describe how ideas from statistical physics were used to make deep learning work much better on small datasets. Finally I will describe how deep learning is now used by Google for speech recognition and object recognition and how it may soon be used for machine translation.

Wednesday, 1:40 - 2:30 PM, Texas Ballroom I–III

IAAI-15 Invited Talk

Data Science for Social Good: Using Your Powers To Make a Social Impact!

Rayid Ghani (University of Chicago)
Introduction by Peter Yeh

The past few years have seen an increasing demand for machine learning/data mining/data science powers. That's wonderful for us data scientists but wouldn't the world be so much better if we also used our computational and analytical powers for social good? In this talk, I'll give examples from work going on around the world to show that there are a lot of important social problems in the world that could use our help — from helping students graduate high school to helping disaster victims to improving health.

Thursday, 9:00 – 9:50 AM, Zilker Ballroom

AAAI-15 Invited Talk

Intelligent Decisions

Meinolf Sellmann
(IBM Thomas J. Watson Research Center)
Introduction by Holger H. Hoos

At its best intelligence creates aesthetic and beauty, yet from a utilitarian perspective intelligence primarily serves the purpose of making better decisions. Today's prescriptive decision support systems are most effective when applied to specific recurring operational problems. Recent advances in AI technology have revived the vision of commercially viable cooperative *strategic* decision support systems. These "cognitive systems" integrate information retrieval, knowledge representation, interactive modelling, as well as social and self-learning capabilities with logic reasoning and probabilistic decision making under uncertainty. We provide a snapshot of the current technology status by showcasing several projects that ultimately aim at intelligent human-in-the-loop decision making.

Friday, 9:00 - 9:50 AM, Zilker Ballroom 1–2

AAAI-15 Invited Talk

Using Statistics and Semantics to Solve Big (Graph) Data Problems

Lise Getoor (University of California, Santa Cruz)
Introduction by Luc de Raedt

Big data problems benefit from modeling both structure and uncertainty, so there is a growing need for tools to develop large, complex probabilistic models. These tools should combine high-level knowledge representation with general purpose, scalable algorithms for learning and inference. In this talk, I will survey some of the recent work from the statistical relational learning community on learning and inference in richly-structured, multi-relational network data. I will highlight both important developments and opportunities in which ideas from AI can have great impact on upcoming challenges within the machine learning, data science and data mining communities.

Friday, 9:00 - 9:50 AM, Zilker Ballroom 3–4

AAAI-15 Invited Talk

von Neumann's Dream

Michael Bowling
(University of Alberta)
Introduction by Tuomas Sandholm

Chess has long served as the measure of progress for artificial intelligence. However, at the very beginning of computing and artificial intelligence, John von Neumann dreamt of a different game: "Real life is not like [chess]. Real life consists of bluffing, of little tactics of deception, of asking yourself what is the other man going to think I mean to do. And that is what games are about in my theory." The game von Neumann hinted at is poker, and it played a foundational role in his formalization of game theory. Shortly after launching the field of game theory, he practically abandoned his new discipline to focus on the budding field of computing. He saw computers as the way to make his mathematics workable. Now, over 70 years later with both significant advances in computing and game theoretic algorithms, von Neumann's dream is now a reality. Heads-up limit Texas hold'em poker, the smallest variant of poker played by humans, is essentially solved. In this talk, I will discuss how we accomplished this landmark result, along with the substantial scientific advances in our failed attempts along the way.

Senior Member Presentations

Tuesday – Friday, January 27–30, Texas Ballroom VII

The AAAI-15 Senior Member Presentation track comprises two subtracks: Summary Talks: established researchers provide broad talks on a well-developed body of research or an important new research area; and Blue Sky Talks: authors present ideas and visions that can stimulate the research community to pursue new directions, such as new problems, new application domains, or new methodologies, that are likely to stimulate significant new research. Seven summary talks and eight Blue Sky talks will be presented (please see the conference schedule on pages 15–28). For more information about the Blue Sky Awards, please see page 5.

What's Hot Talks

Tuesday – Thursday, January 27–29, Texas Ballroom I

The AAAI-15 "What's Hot" track aims to present exciting recent advances and current challenges in subareas of Artificial Intelligence with major conferences or competitions. Twelve "What's Hot" presentations will be presented, representing the CPVR, CHI, HCOMP, IROS, KDD, and KR conferences, as well as the Angry Birds Artificial Intelligence, Automated Negotiating Agents, General Game Playing, RoboCup, Planning, SAT and ASP competitions (please see the conference schedule on pages 15–28).

Student Activities

As part of a focused effort to increase student participation at AAAI, the conference committee has organized a series of student activities at AAAI-15. We invite you to participate for an enriched AAAI experience!

More information and instructions for the following activities can be found at movingai.com/AAAI15/

Social Media Activities

Please join us on social media for AAAI-15! Like us on Facebook, follow us on Twitter, connect on Linkedin, share your photos on our Flickr group, and tweet about our conference using the hashtag #AAAI2015.

Social Media Games: Scavenger Hunts

movingai.com/AAAI15/game.html

We will host online scavenger hunts daily from Tuesday to Thursday. Participate for a chance to win prizes and bragging rights!

Dining/Group Meals

Meet: First 10 minutes of each lunch and dinner break in the foyer of the Zilker Ballroom

Don't want to dine alone? Get paired up with other students and researchers for group meals as well as get suggestions on nearby restaurants!

Student Newcomers Lunch

Sunday, January 25, 12:45 – 2:00 PM
Foothills II, 17th Floor

The first Student Newcomer Lunch will provide an opportunity for students new to AAAI to meet fellow students and senior AI researchers prior to the commencement of the main conference. Attendance is limited to 70 students and all places have currently been filled. Admittance is by ticket only.

AAAI Tutorial (SP3) on How to Be a PhD Student

Sunday, January 25, 4:30 PM – 6:00 PM (1.5 hours)
Texas III, Second Level

Gene Freuder, Universiuty College Cork, will offer advice on how to meet the challenges and take advantage of the opportunities of being a PhD student.

AAAI/SIGAI Doctoral Consortium

Sunday and Monday, January 25–26
Texas II, Second Level

The Twentieth AAAI/SIGAI Doctoral Consortium provides an opportunity for a group of Ph.D. students to discuss and explore their research interests and career objectives in an interdisciplinary workshop together with a panel of established researchers. The sixteen students accepted to participate in this program will also participate in the AAAI-15 evening Poster / Demo Session 1 on Tuesday, January 27. All interested AAAI-15 student registrants are invited to observe the presentations and participate in discussions at the workshop. AAAI and SIGAI gratefully acknowledge grants from the National Science Foundation and David E. Smith, providing partial funding for this event. The final schedule is available at ciigar.csc.ncsu.edu/aaai2015-dc/

AAAI-15 Open House

Monday, January 26, 9 AM – 5:30 PM
Zilker Ballroom 1-3, First Level

The AAAI-15 Open House will welcome high-school students in the Austin area, the general public, graduate and undergraduate students, and established AI researchers. The day will comprise a variety of exhibits and demonstrations, including the posters and demos listed on page 10, as well as the Robotics exhibits, Virtual Agent demos, and a special RoboCup exhibition. The latest work in many areas of AI will be showcased, so be sure to arrive in time to participate. Admission is open to all!

For complete schedule information, please see full details on page 10.

Research Speed Dating

Monday, January 26
6:00 – 7:00 PM, Zilker Ballroom 3

Want to get to know more researchers? Hold off going to the conference reception (we'll save food for you) and attend the research speed dating event on Monday evening! You will get the opportunity to meet and chat with various AAAI attendees from senior researchers to student newcomers before going to the conference reception. Never feel bored and lonely at AAAI again!

Breakfast with Champions: A Women's Mentoring Event

Wednesday, January 28, 7:45 – 8:45 AM
Foothills II, 17th Floor

AAAI is holding an inaugural women's mentoring event for women students to meet with senior women in computer science and/or artificial intelligence. Space is very limited. Admittance is by ticket only.

Easily Accessible Papers

Wednesday and Thursday, January 28–29

Do you feel that some AAAI papers and talks are too difficult to understand? Attend accessible paper talks (designated in program)! These are papers that the authors and reviewers have found to be more easily accessible than typical papers. Then, meet with the authors to hear more about the work and participate in a Q&A session. Easily accessible paper authors will be available on Wednesday and Thursday evenings (see schedule below) to meet and discuss their research with interested attendees. These discussions are open to anyone with interest, but are intended to help expose the research process to students new to research.

Wednesday, January 28

Meet at 4:30 – 5:30 PM

On Machine Learning towards Predictive Sales Pipeline Analytics
Junchi Yan, Chao Zhang, Hongyuan Zha, Min Gong, Changhua Sun, Jin Huang, Stephen Chu, Xiaokang Yang
Hill Country AB

Modelling Class Noise with Symmetric and Asymmetric Distributions
Jun Du, Zhihua Cai
Hill Country AB

PD Disease State Assessment in Naturalistic Environments Using Deep Learning
Nils Yannick Hammerla, James M. Fisher, Peter Andras, Lynn Rochester, Richard Walker, Thomas Plötz
Hill Country AB

Multi-Document Summarization Based on Two-Level Sparse Representation Model
He Liu, Hongliang Yu, Zhi-Hong Deng
Hill Country CD

Learning Greedy Policies for the Easy-First Framework
Jun Xie, Chao Ma, Janardhan Rao Doppa, Prashanth Mannem, Xiaoli Fern, Thomas G. Dietterich, Prasad Tadepalli
Hill Country CD

Chinese Common Noun Phrase Resolution: An Unsupervised Probabilistic Model Rivaling Supervised Resolvers
Chen Chen, Vincent Ng
Hill Country CD

Thursday, January 29

Meet at 4:45 – 5:45 PM

Deep Representation Learning with Target Coding
Shuo Yang, Ping Luo, Chen Change Loy, Kenneth W. Shum, Xiaoou Tang
Hill Country AB

Learning Relational Sum-Product Networks
Aniruddh Nath, Pedro Domingos
Hill Country AB

Are Features Equally Representative? A Feature-Centric Recommendation
Chenyi Zhang, Ke Wang, Ee-peng Lim, Qinneng Xu, Jianling Sun, Hongkun Yu
Hill Country AB

Pearl's Causality in a Logical Setting
Alexander Bochman, Vladimir Lifschitz
Hill Country CD

Automatic Configuration of Sequential Planning Portfolios
Jendrik Seipp, Silvan Sievers, Malte Helmert, Frank Hutter
Hill Country CD

Reusing Previously Found A* Paths for Fast Goal-Directed Navigation in Dynamic Terrain
Carlos Hernández, Roberto Asín, Jorge A. Baier
Hill Country CD

Multi-Agent Pathfinding as a Combinatorial Auction
Ofra Amir, Guni Sharon, Roni Stern
Big Bend Ballroom

When Suboptimal Rules
Avshalom Elmalech, David Sarne, Avi Rosenfeld, Eden Shalom Erez
Big Bend Ballroom

Strategy-Proof and Efficient Kidney Exchange Using a Credit Mechanism
Chen Hajaj, John P. Dickerson, Avinatan Hassidim, Tuomas Sandholm, David Sarne
Big Bend Ballroom

On Fairness in Decision-Making under Uncertainty: Definitions, Computation, and Comparison
Chongjie Zhang, Julie A. Shah
Big Bend Ballroom

Student Abstract and Poster Program

Wednesday and Thursday, January 28–29
Poster Ads: Texas 1, Second Level

This program provides a forum in which students can present and discuss their work during its early stages, meet some of their peers who have related interests, and introduce themselves to more senior members of the field. Students will present poster

AAAI-15 Open House

Monday, January 26
Zilker Ballroom 1-3, First Level

The 2015 AAAI Open House will be held on Monday, January 26 in the Zilker Ballroom. There is no cost to attend this event, and it is open to the public. During the open house there will be demos and posters on many areas and topics including robotics, games, agents, and many others. Speakers Moshe Vardi and Stuart Russell will address the social consequences of AI. We look forward to seeing you there with your friends and family.

For up-to-date open house information, see movingai.com/AAAI15/openhouse.html

Open House Exhibits

Exhibits will be held in Zilker 1–2 and Foyer, from 9:00 AM – 5:30 PM. Open House Exhibits will include Robotics exhibits, the RoboCup Exhibition, Virtual Agents Demos, and the posters and demos (including the Games Showcase) listed below.

Open House Invited Presentations

Open House Invited Presentations will be held in Zilker 3

The Future of (Artificial) Intelligence
Stuart Russell (University of California, Berkeley)
1:00 PM

The news media in recent months have been full of dire warnings about the risk that AI poses to the human race, coming from well-known figures such as Stephen Hawking and Elon Musk. Should we be concerned? If so, what can we do about it?

If Machines Are Capable of Doing Almost Any Work Humans Can Do, What Will Humans Do?
Moshe Vardi (Rice University)
4:30 PM

Over the past 15 years artificial intelligence (AI) has made remarkable progress. While AI has been proven to be much more difficult than believed by its early pioneers, its inexorable progress over the past 50 years suggests that H. Simon was probably right when he wrote in 1956 "machines will be capable ... of doing any work a man can do." I do not expect this to happen in the very near future, but I do believe that by 2045 machines will be able to do a very significant fraction of the work that humans can do. The following question, therefore, seems to be of paramount importance. If machines are capable of doing almost any work humans can do, what will humans do?

Open House Poster Presenters

A Multi-Pass Sieve for Name Normalization
Jennifer D'Souza, University of Texas at Dallas

A Multivariate Timeseries Modeling Approach to Severity of Illness Assessment and Forecasting in ICU with Sparse, Heterogeneous Clinical Data
Marzyeh Ghassemi, Tristan Naumann, and Mengling Feng, MIT

Leveraging Multi-modalities for Egocentric Activity Recognition
Peng-Ju, Hsieh, National Taiwan University

Goal Recognition Design
Sarah Keren and Avigdor Gal, Technion - Israel Institute of Technology

Building a Professor Recommendation System Using Clustering
Mackenzie Leake, Scripps College

Fractal Reasoning
Keith McGreggor, Georgia Institute of Technology

Borrowing from Biology: Using Genetic Algorithms and Hierarchical Genetic Algorithms to Create Technology
Jennifer Seitzer, Rollins College

Incentivizing Users for Balancing Bike Sharing Systems
Marco Santoni, ElectricFeel

An Agent-Based Model of the Emergence and Transmission of a Language System for the Expression of Logical Combinations
Josefina Sierra-Santibanez, Technical University of Catalonia

Going Beyond Literal Command-Based Instructions: Extending Robotic Natural Language Interaction Capabilities
Tom Williams, Tufts University

Open House Demo Presenters

Plan, Repair, Execute, Explain - How Planning Helps to Assemble your Home Theater
Pascal Bercher, Ulm University

Computer Playing Poker (Game Showcase)
Michael Bowling, Rob Holte, Nolan Bard, Neil Burch, Michael Johanson, Trevor Davis, and Dustin Morrill, University of Alberta

Cogsketch: Sketch Understanding for Cognitive Science and Education
Maria Chang, Northwestern University

Samsung Tune: A Scalable Song Recommender System
Maryam Esmaeili, Samsung Research America

Angry Birds AI and Snap! (Game Showcase)
Xiaoyu Ge and Jochen Renz, Australian National University

MoHex, A Strong Hex Player (Game Showcase)
Ryan Hayward, University of Alberta

KU Leuven Innovation Lab for High School Students
Wannes Meert, Guy Van den Broeck, and Jan Van Haaren, KU Leuven

2012 BotPrize Champion: Human-like Bot for Unreal Tournament (Game Showcase)
Jacob Schrum, Southwestern University and Risto Miikkulainen, The University of Texas at Austin

Classifying Guitar Tab Difficulty
Ankit Tandon, University of Texas at Austin

We Are Watson Labs
Dan Tecuci and Rob Turnkett, IBM Watson

Fittle, A Mobile Health & Wellness App
Michael Youngblood, Palo Alto Research Center (PARC, a Xerox company)

Fuego Go Program (Game Showcase)
Yeqin Zhang, University of Alberta

RoboCup at AAAI-15

See page 11 for details.

ads during the lunch breaks on Wednesday and Thursday, January 28–29. They will present their posters in the evening Poster / Demo Session on the corresponding day. For the schedule of student poster presentations, please see the schedule on pages 15-28. Information about the Poster / Demos Sessions is available on page 5 and in the accompanying insert.

AAAI Fellow / Student Lunches

Wednesday and Thursday, January 28–29

First held in 2006, this program provides an opportunity for a small number of students to chat with a AAAI Fellow over an informal lunch during the conference. Sign-up sheets are available at the on-site registration desk in the foyer of the Texas Ballroom. Students should meet their designated Fellow in onsite registration on their assigned day.

Games Night

Wednesday, January 28, 8:15 – 10:00 PM
Foothills II, 17th Floor

Come spend an evening playing games with other AAAI participants at the third annual AAAI Games Night. There will be organized AI-themed games, including a AAAI version of *The Price is Right!* with a chance to win a variety of prizes! Bring your own games to play afterwards.

Robotics Events

AAAI-15 showcases robotics in a variety of programs, including special technical tracks, student robotics paper presentations, Robotics: Science and Systems Early Career Spotlight talks, the Shakey Celebration (see page 6), an exhibition of robotics research from academia and industry, including a RoboCup exhibition match, and a "best robot video" award. AAAI wishes to thank *AI Journal,* the National Science Foundation, and the NSERC Canadian Field Robotics Network (NCFRN), the IEEE Robotics and Automation Society (RAS), and the RoboCup Federation for their generous support of these events.

Robotics Student Fellowship Talks

(Please see the schedule for presentation times)

Learning and Grounding Haptic Affordances Using Demonstration and Human-Guided Exploration
Vivian Chu

Intent Prediction in Human-Robot Interaction
Matthew O. Derry

Apprenticeship Scheduling for Human-Robot Teams in Manufacturing
Matthew Craig Gombolay

Socially Assistive Robotics for Long-Term Health Behavior Change
Jillian Greczek

A Divide and Conquer Approach to Control Complex Continuous State Dynamic Systems using Hierarchical Reinforcement Learning
Sean Harris

Representation Learning for Robotics
Rico Jonschkowski

The Development of Socially Assistive Robots for Healthcare Applications to Improve Quality of Life
Wing-Yue Geoffrey Louie

Multi-Agent Rendezvous
Malika Meghjani

Plan Execution Monitoring through Detection of Unmet Expectations about Action Outcomes
Juan Pablo Mendoza

Task-Oriented Planning for Manipulating Articulated Mechanisms Under Model Uncertainty
Venkatraman Narayanan

Time-Optimal Learning, Exploration and Control for Mobile Robots in (Partially) Known Environments
Vladislav Nenchev

Following a Target Whose Behavior Is Predictable
Florian Shkurti

Learning the State of the World: Object-based State Estimation for Mobile-Manipulation Robots
Lawson L.S. Wong

Robotics: Science and Systems 2014 Presentations

Multi-Heuristics A*
Sandip Aine, Siddharth Swaminathan, Venkatraman Narayanan, Victor Hwang, Maxim Likachev

Active Reward Learning
Christian Daniel, Malte Viering, Jan Metz, Oliver Kroemer, Jan Peters

Open-Vocabulary Object Retrieval
Sergio Guadarrama, Erik Rodner, Kate Saenko, Ning Zhang, Ryan Farrell, Jeff Donahue, Trevor Darrell

Fully Decentralized Task Swaps with Optimized Local Searching
Lantao Liu, Nathan Michael, Dylan Shell

Tell Me Dave: Context-Sensitive Grounding of Natural Language to Manipulation Instructions
Dipendra Kumar Misra, Jaeyong Sung, Kevin Lee, Ashutosh Saxena

Learning Articulated Motions from Visual Demonstration
Sudeep Pillai, Matthew Walter, Seth Teller

Asking for Help Using Inverse Semantics
Stefanie Tellex, Ross Knepper, Adrian Li, Daniela Rus, Nicholas Roy

Learning to Locate from Demonstrated Searches
Paul Vernaza, Anthony Stentz

Correct High-level Robot Behavior in Environments with Unexpected Events
Kai Weng Wong, Rudiger Ehlers, Hadas Kress-Gazit

Hierarchical Semantic Labeling for Task-Relevant RGB-D Perception
Chenxia Wu, Ian Lenz, Ashutosh Saxena

Robotics Exhibition

Monday – Thursday, January 26–29

Exhibit Hours:

Monday, January 26:	9:00 AM – 6:00 PM
Tuesday, January 27:	10:00 AM – 8:45 PM
Wednesday, January 28:	10:00 AM – 8:00 PM
Thursday, January 29:	10:00 AM – 8:15 PM

Adept MobileRobots

Contact: Chad LaCroix
Robot Name: Pioneer 3-DX and Pioneer LX

Since 1995 when we launched the first Pioneer robot, Adept MobileRobots (previously known as ActivMedia Robotics and MobileRobots, Inc.) has grown to be a global leader in the design and manufacture of intelligent mobile robots. In 2010, MobileRobots Inc. was acquired by the largest industrial robotics company in the US, Adept Technology. The Adept MobileRobots academic and research division continues to provide the world's leading mobile robot platforms for mobile robotics research.

Duke University

Contact: George Konidaris

Come and meet a few members of the newly launched Duke Robotics!

Oregon State University

Contact: Kagan Tumer

As robots become a daily part of our lives, they must learn to work closely with us in our homes and workplaces. Oregon State University is leading robotics research for the real world with new MS and PhD programs and expertise in locomotion, manipulation, decision making, human-robot interaction, and coordination.

Texas A&M University

Contact: Robin R. Murphy
Robot Names: Survivor Buddy, AirRobot 100, Bujold, AC-ROV
Team Name: Center for Robot-Assisted Search and Rescue

The Center for Robot-Assisted Search and Rescue (CRASAR) is devoted to field research, education, and advocacy. CRASAR has participated in 17 incidents, including the 9/11 World Trade Center, Hurricane Katrina, and the Fukushima Daiichi nuclear accident. Artificial intelligence is needed throughout the data to decision process, not just for control.

University of California, Irvine

Contact: Ting-Shuo Chou (tingshuc@uci.edu)
Robot Name: CARL-SJR
Team Name: Cognitive Anteater Robotics Laboratory

CARL-SJR is a social assistive robot, which has a nearly full-body tactile sensory area that encourages people to communicate with it through touches and has a surface that displays animated colorful patterns. CARL-SJR is also a neuromorphic robot with a spiking neural network model for learning capability. Several social assistive games for ASD and ADHD therapy are built upon CARL-SJR.

University of Texas at Austin

Contact: Jivko Sinapov
Robot Name: Segbots

Since September 2014, our team of 5 Segbots have traveled for over 140 km without human guidance throughout the Computer Science building at UT Austin. They can navigate autonomously, learn new words for places and objects, and even draw using a Kinova MICO arm. Come see them in action!

University of Texas at Austin

Contact: Luis Sentis
Robot Name: Dreamer Humanoid Robot

RoboCup at AAAI-15

Monday, January 26, 12:00 - 6:00 PM
Tuesday, January 27, 9:00 am - 8:45 PM
Zilker Ballroom 1

The RoboCup competitions have promoted research on artificial intelligence and robotics since 1997. One of their main foci is the worldwide popular game of soccer, with the aim to build fully autonomous cooperative multi-robot systems that perform well in dynamic and adversarial environments.

Given the recent expansion of interest in intelligent robotics, AAAI and the RoboCup Federation, with the help of NSF, are co-sponsoring a RoboCup soccer exhibition match at AAAI-15 to showcase the state-of-the-art in robotics soccer to the broad artificial intelligence research community and spur additional interest in this exciting testbed for intelligent systems. The participating teams will be UPennalizers from The University of Pennsylvania, UT Austin Villa from the University of Texas at Austin, and rUNSWift from the University of New South Wales. Each team won a championship at the 2014 international competition (in the humanoid league, 3D simulation league, and Standard Platform League respectively). They will demonstrate a game according to the regulations of the Standard Platform League, in which all teams use identical Aldebaran Nao robots.

Competitions, Games Showcase, Job Market Electronic Bulletin Board

AI Video Competition

www.aaaivideos.org
Video Loop: Monday–Thursday, January 26–29
Texas Ballroom Foyer
Awards Ceremony: Thursday, January 29, 1:20 – 1:50 PM
Zilker Ballroom

The Ninth AI Video Competition communicates to the world the fun of pursuing research in AI, and illustrates the impact of some of our applications. Submitters were asked to create narrated videos of 1–5 minutes in length. The submissions were reviewed by an international program committee, led by cochairs Sabine Hauert (University of Bristol, UK) and Mauro Birattari (Université Libre de Bruxelles, Belgium). Awards will be presented in the following categories: Best Video, Best Student Video, and People's Choice. Authors of award-winning videos will be presented with "Shakey" trophies that honor SRI's Shakey robot and its pioneering video. Award winning videos will be screened at the ceremony. AAAI gratefully acknowledges the AI Journal Review Board for its donation and the Bristol Robotics Laboratory for help with the manufacturing of the awards.

Games Showcase

Monday, January 26 *(Open House)*	9:00 AM – 6:00 PM
Wednesday, January 28	6:30 - 8:00 PM
Thursday, January 29	6:45 - 8:15 PM

Zilker Ballroom

The Games Showcase will provide a glimpse into the latest research in game-playing programs. The last 10 years has seen significant shifts in game research, with new research in games of imperfect information, as well as research in modern video games. Furthermore, new search techniques have brought significant progress in games like Go, for which previous techniques did not perform well. Come by the showcase to see a mix of games and learn about the latest research progress.

Games Showcase Demonstrations

The Games Showcase will be available during the Open House on Monday and during Wednesday and Thursday evening poster sessions. The games are scheduled in 30-minute slots each evening.

Poker Program
Michael Bowling, University of Alberta
January 28, 7:00 - 7:30 PM
January 29, 6:45 - 7:15 PM

Poker Program
Sam Ganzfried, Carnegie Mellon University
January 28, 6:30 - 8:00 PM
January 29, 6:45 - 8:15 PM

Angry Birds AI and Snap!
Xiaoyu Ge, Australian National University
January 28, 6:30 - 7:00 PM
January 29, 7:45 - 8:15 PM

MoHex (Hex) and Fuego (Go)
Ryan Hayward, University of Alberta
January 28, 6:30 - 7:00 PM
January 29, 7:15 - 7:45 PM

2012 BotPrize Champion: Humanlike Bot for Unreal Tournament
Jacob Schrum, Southwestern University and Risto Miikkulainen, The University of Texas at Austin
January 28, 7:30 - 8:00 PM
January 29, 6:45 - 7:15 PM

General Game Playing Competition

Tuesday - Thursday, January 27–29
Texas Ballroom Foyer

The General Game Playing Exhibition this year will include multiple examples of General Game Playing. During the lunch break on Tuesday, there will be replays of the final games of the 2014 Intrenational GGP Competition. On Wednesday over lunch, there will be a grudge match between Sancho (teh 2014 winner) and Turboturtle (the 2013 winner). And on Thursday over lunch, there will be the annual Carbon vs Silicon competition, pitting the current champion (Sancho) against a human player in a best-of-three carbon-vs-silicon match. Each afternoon, conference participants will have the opporunity to play against the automated general game players.

AAAI / ACM SIGAI Job Market Electronic Bulletin Board

Texas Ballroom Foyer

AAAI and ACM SIGAI are pleased to offer an electronic job bulletin board to AAAI-15 attendees. Companies with job opportunities, as well as job seekers, have provided ads to make up this kiosk display at AAAI-15. If there is sufficient interest, the opportunity to meet with job seekers will be announced via AAAI-15 social media channels.

AAAI job seekers and job advertisers are invited to attend a meet and greet session during the long break just prior to the Shakey Celebration on Tuesday, 4:45–5:45 PM in Foothills I, 17th Floor. Light refreshments will be available.

Sponsor / Exhibit Program

The AAAI-15 sponsor / exhibit program will be held Tuesday – Thursday, January 27 – 29 in the Texas Ballroom Foyer. This program provides an opportunity for AI-related companies and publishers to support the goals of AAAI and reach out to AI professionals. In some cases, sponsors have elected to exhibit at AAAI-15. AAAI thanks all sponsors and exhibitors for their participation in AAAI-15!

Exhibit Hours

Tuesday, January 27	10:00 AM – 6:00 PM
Wednesday, January 28	10:00 AM – 6:00 PM
Thursday, January 29	10:00 AM – 4:00 PM

Exhibitors

ACM/SIGAI (Sponsor)

sigai.acm.org
Contact: Yolanda Gil

SIGAI is the ACM Special Interest Group on Artificial Intelligence. Its AI Matters newsletter disseminates news and articles of interest to the AI community. SIGAI supports many student activities, including the new SIGAI Career Network and Conference for early career researchers, conference travel, and the AAAI/SIGAI Doctoral Consortium.

AI Journal (Sponsor)

ijcai.org/aijd.php

Artificial Intelligence Journal (AIJ) is one of the longest established and most respected journals in AI, and since it was founded in 1970, it has published many of the key papers in the field. The operation of the Editorial Board is supported financially through an arrangement with AIJ's publisher, Elsevier. The editorial board of Artificial Intelligence is now in the unique position of being able to make available substantial funds, of the order of EUR 175,000 per annum to support the promotion and dissemination of AI research.

AI Topics (Exhibitor)

aaai.org/aitopics

The Premier Source of Information about AI. Stop by the AITopics booth to pick up a luggage tag. Sign up for the free AI-Alert service for weekly summaries of news stories that have mentioned AI. See what AITopics can provide for your classroom instruction or term papers. Suggest improvements. Review our list of classic papers to add your favorites.

Baidu (Sponsor/Exhibitor)

www.baidu.com
Contacts: Dawei Peng and Daren Li

The Baidu Mobile App. We've just released the latest version—5.5—of our flagship app, Mobile Baidu. In addition to traditional text and speech-based search, users can tap the small camera icon in the search bar for to activate a wide range of visual search capabilities: similar image search, product search, flower identification, pet recognition, facial recognition and much more.

Baidu Knowledge Graph (BKG). We built BKG with billions of interconnected entities by extracting information from various sources, including web pages, user queries, documents, feeds etc. BKG powers various product lines across Baidu, includ-

ing search, mobile, LBS, ads, and more.

BigML, Inc (Sponsor / Exhibitor)

bigml.com - info@bigml.com

With more than 12,000 users around the world, BigML has quickly become the leading machine learning platform to build real-world predictive applications. A growing number of universities and research centers are using BigML to teach and learn how machine learning works: from basic concepts to sophisticated machine learning workflows.

Traditionally, machine learning tools have been prohibitively complex and expensive. In addition, they've lacked the programmability and flexibility required to incorporate machine-learned models into related applications, systems and services. To address this problem, the BigML team has been working since its inception to make machine learning more consumable, programmable, and scalable through a well-defined workflow, insightful visualizations, and fully featured REST API. The net result is an extremely powerful yet intuitive platform that can quickly be leveraged by developers, data scientists and business analysts alike to perform a variety of predictive analytics and machine learning tasks.

Cambridge University Press (Exhibitor)

www.cambridge.org

Stop by the Cambridge table to browse new titles such as *Knowledge Representation, Reasoning, and the Design of Intelligent Agents* by Gelfond and Kahl, *Understanding Machine Learning* by Shalev-Shwartz and Ben-David, *Brain-Computer Interfacing* by Rao, *Principles of Automated Negotiation* by Fatima, Kraus and Wooldridge, and *The Cambridge Handbook of AI.*

CRA Computing Community Consortium (Sponsor)

cra.org/ccc, cccblog.org

Contact: Ann Drobnis, Director (adrobnis@cra.org)

The mission of the Computing Research Association's Computing Community Consortium (CCC) is to catalyze the computing research community and enable the pursuit of innovative, high-impact research. CCC conducts activities that strengthen the research community, articulate compelling research visions, and align those visions with pressing national and global challenges. CCC communicates the importance of those visions to policymakers, government and industry stakeholders, the public, and the research community itself.

Disney Research (Sponsor)

www.disneyresearch.com

careers@disneyresearch.com

The Walt Disney Company has a long history of innovation and today the company focuses on content creation and the tools required to tell stories and create interactive experiences in all forms of media. Disney Research honors Walt Disney's legacy of innovation by exploring novel technologies. Disney Research labs provide a research foundation for the many business units within The Walt Disney Company. For example: Walt Disney Feature Animation, Walt Disney Imagineering, Parks & Resorts, Walt Disney Studios Motion Pictures, Disney Interactive Media Group, ESPN, Marvel, Industrial Light and Magic, and Pixar Animation Studios. Disney Research has sibling labs located in Pittsburgh, Zurich, Los Angeles and Boston. To learn more about current opportunities, please visit www.disneyresearch.com/careers

The Walt Disney Company is an Affirmative Action / Equal Opportunity Employer and encourages applications from members of under-represented groups.

Elsevier (Exhibitor)

www.elsevier.com/computerscience

Elsevier is a leading international publisher of Computer Science journals, books and electronic products. By delivering first class information and innovative tools, we continue to refine our products to better serve the research need of industry professionals, researchers and students worldwide. We are proud to play an integral part within the computer science community and to participate in the advancement of this field. Visit our table to meet publishers and view the latest journal information and book titles in Artificial Intelligence.

IEEE Robotics and Automation Society (RAS) (In cooperation)

IEEE Robotics and Automation Society (RAS)

www.ieee-ras.org/

Contact: ras@ieee.org

RAS strives to advance innovation, education, and fundamental and applied research in robotics and automation, and to foster the development and facilitate the exchange of scientific and technological knowledge in these two areas. The IEEE Robotics and Automation Society's objectives are scientific, literary and educational in character. The Society strives for the advancement of the theory and practice of robotics and automation engineering and science and of the allied arts and sciences, and for the maintenance of high professional standards among its members.

Google Inc. (Sponsor)

(research.google.com)

Google's mission is to organize the world's information and make it universally accessible and useful. Perhaps as remarkable as two Stanford research students having the ambition to found a company with such a lofty objective is the progress the company has made to that end. Ten years ago, Larry Page and Sergey Brin applied their research to an interesting problem and invented the world's most popular search engine. The same spirit holds true at Google today. The mission of research at Google is to deliver cutting-edge innovation that improves Google products and enriches the lives of all who use them. We publish innovation through industry standards, and our researchers are often helping to define not just today's products but also tomorrow's.

Infosys Limited (Sponsor/Exhibitor)

www.infosys.com

Infosys is a global leader in consulting, technology, outsourcing and next-generation services. We enable clients, in more than 50 countries, to stay a step ahead of emerging business trends and outperform the competition. We help them transform and thrive in a changing world by co-creating breakthrough solutions that combine strategic insights and execution excellence. Visit www.infosys.com to see how Infosys (NYSE: INFY), with US$8.25 B in annual revenues and 165,000+ employees, is helping enterprises renew themselves while also creating new avenues to generate value.

Microsoft Research (Sponsor/Exhibitor)

research.microsoft.com

Since its founding in 1991, Microsoft Research has grown into one of the largest research organizations in the world. With more than 1,100 scientists and engineers at multiple labs around the world, the mission has stayed the same for over 20 years: to advance the frontiers of computing through basic and applied research, and to impact the products and services of Microsoft through our inventions.

NSERC Canadian Field Robotics Network (NCFRN) (Sponsor)

The NSERC Canadian Field Robotics Network (NCFRN) brings together academic, government, and industrial researchers in the area of field robotics, to develop the science and technologies to eventually allow teams of heterogeneous-terrestrial, aerial, underwater and human-centric-to work collaboratively and autonomously in outdoor environments, and to communicate critical information to humans operators.

The NCFRN provides a national framework for 11 researchers from 8 renowned Canadian universities, 10 industrial partners and 4 government agencies to work synergistically in order to make better progress in key aspects of field robotics and compete more effectively internationally. Technologies developed by the NCFRN will help address Canadian problems, e.g. monitoring and maintaining the state of our environmental heritage, patrolling borders in the Arctic, or improving the quality of life of senior citizens.

The NCFRN has been training highly qualified new researchers and engineers who will in turn fuel research and development in Canada.

RoboCup Federation (In cooperation)

www.roboticstoday.com/institutions/robocup-federation

The Robocup Federation is an international organisation that promotes and stimulates robot technology worldwide by organizing robot competitions and symposia. The RoboCup competitions have promoted research on artificial intelligence and robotics since 1997. One of their main foci is the worldwide popular game of soccer, with the aim to build fully autonomous cooperative multi-robot systems that perform well in dynamic and adversarial environments.

TRACLabs, Inc. (Exhibitor)

Contact: Stephen Hart, PhD, Senior Scientist (swhart@traclabs.com)

281-6789-4194

TRACLabs, located in Houston Texas, performs research and development in robotics and artificial intelligence for a variety of government agencies and commercial companies. TRACLabs is the only small company to receive DARPA funding for the DARPA Robot Challenge (DRC) Finals to be held in June 2014.

University of Southern California/Information Sciences Institute (Sponsor)

ai.isi.edu

Contact: Yolanda Gil (gil@isi.edu)

ISI is home to more than one hundred and thirty researchers and PhD students in Artificial Intelligence. ISI is part of USC's School of Engineering, currently ranked in the top ten in the country due in

part to ISI's standing. AI research areas include natural language processing, information integration, complex networks, human behavior, semantic web, and knowledge technologies.

University of Texas at Austin (In cooperation)

www.cs.utexas.edu/
Contact: Bruce Porter, Department Chair
(chair@cs.utexas.edu)

The Department of Computer Science is in the heart of the 350-acre campus of the University of Texas. Housed in the beautiful new Bill & Melinda Gates Computer Science Complex, the Department includes 45 faculty and 200 Ph.D. students and postdocs conducting research across the breadth of computer science.

Yahoo Labs (Sponsor)

labs.yahoo.com
YahooLabs@yahoo-inc.com

Yahoo Labs serves as Yahoo's most forward-looking thinkers, providing deep technical expertise on critical scientific and technical topics. Yahoo Labs is the company's incubator for bold scientific experimentation. We believe that research is critical to creating delightful, personalized experiences for users and enhancing value for advertisers. At Yahoo Labs: We cover the spectrum from use-inspired basic research to applied science; We anticipate and invent technology-based opportunities; We anticipate and design for social and market trends; We explore fundamental computational, social, and economic phenomena; We participate in the international scientific research community; We work extremely closely with our software development organizations; We work closely with the world's best universities.

Registration

Conference registration is located on the second level of the Hyatt Regency Austin, beginning Sunday, January 25. Registration hours are:

Sunday, January 25	7:30 AM - 5:00 PM
Monday, January 26	7:30 AM - 5:00 PM
Tuesday, January 27	8:00 AM - 5:00 PM
Wednesday, January 28	8:30 AM - 5:00 PM
Thursday, January 29	8:30 AM - 5:00 PM
Friday, January 30	8:30 AM - 11:00 am

AAAI attendees who wish to register onsite will be asked to complete an onsite form, and then process their own registration at the AAAI-15 registration site: www.regonline.com/aaai15 within the following 24-hour period. They will be issued a badge at the time that they complete the form. For a list of registration rates, please see aaai.org/AAAI15 or visit onsite registration. Attendees who select not to use the online system will be required to pay by check or cash onsite.

General Information

ADA Devices

The staff at the Hyatt Regency Austin is committed to ensuring that they meet and exceed all of the requirements for the Americans with Disabilities Act. The staff is trained to accommodate guests with special needs.

Admission

Each conference attendee will receive a name badge upon registration. This badge is required for admittance to the technical, tutorial, IAAI, and workshop programs, as well as all social events. Smoking is not allowed in any of the technical, poster/demo, tutorial, workshop, or IAAI sessions.

Banking

An ATM is located in the hotel lobby, just beside the Front Desk.

Business Center/Shipping

The Hyatt Business Center is located on the 2nd floor, just past the entrance to the Zilker skywalk. For package handling please see the hotel Concierge.

Career Information

A bulletin board for job opportunities in the artificial intelligence industry will be made available in the registration area. Attendees are welcome to post job descriptions of openings at their company or institution. Information about the AAAI / ACM SIGAI Job Market Bulletin Board is available on page 12.

Hotel Dining/Coffee

A Starbucks is located on the 1st floor of the Hyatt, to the immediate right of the front entrance of the hotel. The Marker 10 Spirits and Cuisine Lounge features cocktails, casual dining, lake view, and music. The SWB-Southwest Bistro on the second level serves breakfast, lunch and dinner.

For restaurants near the Hyatt, please visit austin.hyatt.com/en/hotel/dining.html

Hotel Reservations

For information regarding hotel reservations, please contact the Hyatt Regency Austin directly at 1-888-421-1442.

Internet Access

Wireless Internet Access codes for guestrooms will be provided at check in. WiFi access is complimentary in a lobby spaces using the code: **Free2**

AAAI-15 attendees will be provided with access codes for the meeting areas onsite.

List of Attendees

A list of preregistered attendees of the conference will be available for review at the AAAI Desk in the registration area. Attendee lists will not be distributed.

Parking

Overnight self-parking is available at $19 per day with unlimited guest access (guests only). Daily self-parking has hourly rates of 0-4 hours at $6.00, 4-7 hours at $13.00, and 7+ hours at $19.00. Daily valet parking is $15.00 per day.

Printed Materials

Display tables for the distribution of promotional and informational materials of interest to conference attendees will be located in the registration area.

Proceedings/Technical Reports

AAAI proceedings will be available after the conference in electronic format only via the AAAI Digital Library. Preliminary PDFs of all papers are available via the online AAAI-15 schedule. For more information, please inquire at the registration desk.

Transportation

Local Transit

Single ride is only $1. Day pass is $2. Get around town using Capital Metro's convenient app. Buy passes, plan trips, and get real-time arrical information on the go. www.capmetro.org/app

Airport Flyer Bus Service

Austin's Capitol Metro offers direct airport bus service via a dedicated route that travels between the airport and downtown, the Capitol and The University of Texas. $1.50 one way. Call: 512-474-1200, Toll-free: 800-474-1201

Airport Super Shuttle

Transfer from the hotel to the airport is $14 per person. Advance pickup arrangements must be secured to travel from the hotel to the airport. Please call 512-258-3826 or contact the concierge to arrange a pickup.

Volunteer Station

The volunteer station will be located in the onsite registration area. All volunteers are required to sign in prior to their shift, and sign out when they finish.

Disclaimer

In offering the Hyatt Regency Austin, the University of Texas at Austin, Texas Exposition Services, R&R Limousine and Bus, and all other service providers (hereinafter referred to as "Supplier(s)" for the AAAI Conference on Artificial Intelligence and the Innovative Applications Conference), AAAI acts only in the capacity of agent for the Suppliers that are the providers of the service. Because AAAI has no control over the personnel, equipment or operations of providers of accommodations or other services included as part of the AAAI-15/IAAI-15 program, AAAI assumes no responsibility for and will not be liable for any personal delay, inconveniences or other damage suffered by conference participants which may arise by reason of (1) any wrongful or negligent acts or omissions on the part of any Supplier or its employees, (2) any defect in or failure of any vehicle, equipment or instrumentality owned, operated or otherwise used by any Supplier, or (3) any wrongful or negligent acts or omissions on the part of any other party not under the control, direct or otherwise, of AAAI.

Tuesday January 27 — 8:30 AM – 1:20 PM

8:30 - 8:55

Welcome and Opening Remarks, AAAI Organizational Awards/Honors

9:00 – 9:50

ZILKER BALLROOM

AAAI-15/IAAI-15 Joint Invited Talk

You Can't Play 20 Questions with Nature and Win
Oren Etzioni (Allen Institute for Artificial Intelligence (AI2))
Introduction by David Gunning

TEXAS BALLROOM

AAAI-15 Invited Talk

Artificial Intelligence, Machine Learning and Robotics: Interplay and Interaction
Drew Bagnell (Carnegie Mellon University)
Introduction by Michael Beetz

9:50 – 10:10

Coffee Break

10:10 – 11:50

TEXAS I

Machine Learning 1

Talks

Easily Accessible Paper: On Machine Learning towards Predictive Sales Pipeline Analytics
Junchi Yan, Chao Zhang, Hongyuan Zha, Min Gong, Changhua Sun, Jin Huang, Stephen Chu, Xiaokang Yang

Forecasting Collector Road Speeds under High Percentage of Missing Data
Xin Xin, Chunwei Lu, Yashen Wang, Heyan Huang

Identifying At-Risk Students in Massive Open Online Courses
Jiazhen He, James Bailey, Benjamin I. P. Rubinstein, Rui Zhang

Tensor-Based Learning for Predicting Stock Movements
Qing Li, LiLing Jiang, Ping Li, Hsinchun Chen

Automatic Assessment of OCR Quality in Historical Documents
Anshul Gupta, Ricardo Gutierrez-Osuna, Matthew Christy, Boris Capitanu, Loretta Auvil, Liz Grumbach, Richard Furuta, Laura Mandell

Burst Time Prediction in Cascades
Senzhang Wang, Zhao Yan, Xia Hu, Philip S. Yu, Zhoujun Li

Poster Ads

Learning to Hash on Structured Data
Qifan Wang, Luo Si, Bin Shen

Generalized Singular Value Thresholding
Canyi Lu, Changbo Zhu, Chunyan Xu, Shuicheng Yan, Zhouchen Lin

A Sparse Combined Regression-Classification Formulation for Learning a Physiological Alternative to Clinical Post-Traumatic Stress Disorder Scores
Sarah M. Brown, Andrea Webb, Rami S. Mangoubi, Jennifer G. Dy

An SVD and Derivative Kernel Approach to Learning from Geometric Data
Eric Wong, J. Zico Kolter

Efficient Benchmarking of Hyperparameter Optimizers via Surrogates
Katharina Eggensperger, Frank Hutter, Holger H. Hoos, Kevin Leyton-Brown

TEXAS II–III

Computational Sustainability and AI 1

Talks

Energy Disaggregation via Learning 'Powerlets' and Sparse Coding
Ehsan Elhamifar, Shankar Sastry

Power System Restoration with Transient Stability
Hassan Hijazi, Terrence W.K. Mak, Pascal Van Hentenryck

Resilient Upgrade of Electrical Distribution Grids
Emre Yamangil, Russell Bent, Scott Backhaus

Towards Optimal Solar Tracking: A Dynamic Programming Approach
Athanasios Aris Panagopoulos, Georgios Chalkiadakis, Nicholas R. Jennings

Learning Large-Scale Dynamic Discrete Choice Models of Spatio-Temporal Preferences with Application to Migratory Pastoralism in East Africa
Stefano Ermon, Yexiang Xue, Russell Toth, Bistra Dilkina, Richard Bernstein, Theodoros Damoulas, Patrick Clark, Steve DeGloria, Andrew Mude, Christopher Barrett, Carla P. Gomes

Poster Ads

Convergent Plans for Large-Scale Evacuations
Caroline Even, Victor Pillac, Pascal Van Hentenryck

Predisaster Preparation of Transportation Networks
Hermann Schichl, Meinolf Sellmann

SmartShift: Expanded Load Shifting Incentive Mechanism for Risk-Averse Consumers
Bochao Shen, Balakrishnan Narayanaswamy, Ravi Sundaram

Best-Response Planning of Thermostatically Controlled Loads under Power Constraints
Frits de Nijs, Matthijs T. J. Spaan, Mathijs M. De Weerdt

Influence-Driven Model for Time Series Prediction from Partial Observations
Saima Aman, Charalampos Chelmis, Viktor K. Prasanna

A Nonparametric Online Model for Air Quality Prediction
Vitor Guizilini, Fabio Ramos

Cognitive Social Learners: An Architecture for Modeling Normative Behavior
Rahmatollah Beheshti, Awrad Mohammed Ali, Gita Sukthankar

TEXAS V–VI

Knowledge Representation & Reasoning 1

Talks

The Relative Expressiveness of Abstract Argumentation and Logic Programming
Hannes Strass

Grounded Fixpoints
Bart Bogaerts, Joost Vennekens, Marc Denecker

Exploiting Parallelism for Hard Problems in Abstract Argumentation
Federico Cerutti, Ilias Tachmazidis, Mauro Vallati, Sotirios Batsakis, Massimiliano Giacomin, Grigoris Antoniou

On Computing Explanations in Argumentation
Xiuyi Fan, Francesca Toni

LARS: A Logic-Based Framework for Analyzing Reasoning over Streams
Harald Beck, Minh Dao-Tran, Thomas Eiter, Michael Fink

Logic Programming in Assumption-Based Argumentation Revisited — Semantics and Graphical Representation
Claudia Schulz, Francesca Toni

Talk Lengths

AAAI Talks = 15 minutes

AAAI Poster Ads = 2 minutes

Senior Member Summary Talks = 20 minutes

Senior Member Blue Sky Talks = 15 minutes

What's Hot Talks = 15 minutes

Robotics/RSS Talks = 10 minutes

IAAI Deployed Talks = 30 minutes

IAAI Emerging Talks = 20 minutes

IAAI Challenge Talks = 10 + 10 Q&A

Poster Ads

On Elementary Loops and Proper Loops for Disjunctive Logic Programs
Jianmin Ji, Hai Wan, Peng Xiao

Splitting a Logic Program Revisited
Jianmin Ji, Hai Wan, Ziwei Huo, Zhenfeng Yuan

HILL COUNTRY AB

Planning and Scheduling 1

Talks

Better Be Lucky than Good: Exceeding Expectations in MDP Evaluation
Thomas Keller, Florian Geißer

Factored MCTS for Large Scale Stochastic Planning
Hao Cui, Roni Khardon, Alan Fern, Prasad Tadepalli

Hierarchical Monte-Carlo Planning
Ngo Anh Vien, Marc Toussaint

Efficient Bounds in Heuristic Search Algorithms for Stochastic Shortest Path Problems
Eric A. Hansen, Ibrahim Abdoulahi

Preference Planning for Markov Decision Processes
Meilun Li, Zhikun She, Andrea Turrini, Lijun Zhang

Information Gathering and Reward Exploitation of Subgoals for POMDPs
Hang Ma, Joelle Pineau

Poster Ads

Solving Uncertain MDPs with Objectives that Are Separable over Instantiations of Model Uncertainty
Yossiri Adulyasak, Pradeep Varakantham, Asrar Ahmed, Patrick Jaillet

Representation Discovery for MDPs Using Bisimulation Metrics
Sherry Shanshan Ruan, Gheorghe Comanici, Prakash Panangaden, Doina Precup

Real-Time Symbolic Dynamic Programming for Hybrid MDPs
Luis G. R. Vianna, Leliane N. de Barros, Scott Sanner

Agnostic System Identification for Monte Carlo Planning
Erik Talvitie

Improving Exploration in UCT Using Local Manifolds
Sriram Srinivasan, Erik Talvitie, Michael Bowling

BIG BEND

Game Theory & Economic Paradigms 1

Talks

Conventional Machine Learning for Social Choice
John A. Doucette, Kate Larson, Robin Cohen

Fully Proportional Representation with Approval Ballots: Approximating the MaxCover Problem with Bounded Frequencies in FPT Time
Piotr Skowron, Piotr Faliszewski

Justified Representation in Approval-Based Committee Voting
Haris Aziz, Markus Brill, Vincent Conitzer, Edith Elkind, Rupert Freeman, Toby Walsh

A Complexity Approach for Core-Selecting Exchange with Multiple Indivisible Goods under Lexicographic Preferences
Etsushi Fujita, Julien Lesca, Akihisa Sonoda, Taiki Todo, Makoto Yokoo

Voting Rules As Error-Correcting Codes
Ariel D. Procaccia, Nisarg Shah, Yair Zick

Egalitarian Collective Decision Making under Qualitative Possibilistic Uncertainty: Principles and Characterization
Nahla Ben Amor, Fatma Essghaier, Hélène Fargier

Poster Ads

Plurality Voting under Uncertainty
Reshef Meir

On the Convergence of Iterative Voting: How Restrictive Should Restricted Dynamics Be?
Svetlana Obraztsova, Evangelos Markakis, Maria Polukarov, Zinovi Rabinovich, Nicholas R. Jennings

Approximating Optimal Social Choice under Metric Preferences
Elliot Anshelevich, Onkar Bhardwaj, John Postl

Elections with Few Voters: Candidate Control Can Be Easy
Jiehua Chen, Piotr Faliszewski, Rolf Niedermeier, Nimrod Talmon

Envy-Free Cake-Cutting in Two Dimensions
Erel Segal-Halevi, Avinatan Hassidim, Yonatan Aumann

TEXAS VII

Funding Information Session

HILL COUNTRY CD

IAAI-15: Machine Learning, Information Fusion, and HCI

Emerging: Day-Ahead Hail Prediction Integrating Machine Learning with Storm-Scale Numerical Weather Models
David John Gagne II, Amy McGovern, Jerald Brotzge, Michael Coniglio, James Correia Jr., Ming Xue

Emerging: Capturing Human Route Preferences from Track Information: New Results
Johnathan Gohde, Mark Boddy, Hazel Shackleton, Steve Johnston

Emerging: A Robust and Extensible Tool for Data Integration Using Data Type Models
Andres Quiroz, Eric Huang, Luca Ceriani

Emerging: Maestoso: An Intelligent Educational Sketching Tool for Learning Music Theory
Paul Taele, Laura Barreto, Tracy Hammond

11:50 – 1:20

Lunch Break

Tuesday January 27 — 1:20 PM – 3:30 PM

1:20 - 1:50

ZILKER BALLROOM

Senior Member Blue Sky Award Talks 1

Machine Teaching: An Inverse Problem to Machine Learning and an Approach toward Optimal Education
Xiaojin Zhu

Emerging Architectures for Global System Science
Michela Milano, Pascal Van Hentenryck

TEXAS BALLROOM I

What's Hot Talks 1

What's Hot in the General Game Playing Competition
Michael Genesereth

What's Hot in the RoboCup@Home Competition
Sven Wachsmuth

TEXAS BALLROOM II-III

What's Hot Talks 2

What's Hot in Intelligent Robots and Systems (IROS)
Lynne Parker

What's Hot in Computer Vision and Pattern Recognition (CVPR)
Rene Vidal

1:55 - 3:10

TEXAS I

Machine Learning 2

Talks

Learning Multi-Level Task Groups in Multi-Task Learning
Lei Han, Yu Zhang

Active Manifold Learning via Gershgorin Circle Guided Sample Selection
Hongteng Xu, Hongyuan Zha, Ren-Cang Li, Mark A. Davenport

Integrating Features and Similarities: Flexible Models for Heterogeneous Multiview Data
Wenzhao Lian, Piyush Rai, Esther Salazar, Lawrence Carin

Online Boosting Algorithms for Anytime Transfer and Multitask Learning
Boyu Wang, Joelle Pineau

Poster Ads

Low-Rank Similarity Metric Learning in High Dimensions
Wei Liu, Cun Mu, Rongrong Ji, Shiqian Ma, John R. Smith, Shih-Fu Chang

Transaction Costs-Aware Portfolio Optimization via Fast Löwner-John Ellipsoid Approximation
Weiwei Shen, Jun Wang

Shift-Pessimistic Active Learning Using Robust Bias-Aware Prediction
Anqi Liu, Lev Reyzin, Brian D. Ziebart

Structured Embedding via Pairwise Relations and Long-Range Interactions in Knowledge Base
Fei Wu, Jun Song, Yi Yang, Xi Li, Zhongfei Zhang, Yueting Zhuang

Active Learning by Learning
Wei-Ning Hsu, Hsuan-Tien Lin

Convex Batch Mode Active Sampling via α-relative Pearson Divergence
Hanmo Wang, Liang Du, Peng Zhou, Lei Shu, Yi-Dong Shen

Fast Gradient Descent for Drifting Least Squares Regression, with Application to Bandits
Nathan Korda, Prashanth L.A., Rémi Munos

Structural Learning with Amortized Inference
Kai-Wei Chang, Shyam Upadhyay, Gourab Kundu, Dan Roth

TEXAS II–III

AI and the Web 1

Talks

An Axiomatic Approach to Link Prediction
Sara Cohen, Aviv Zohar

Representation Learning for Aspect Category Detection in Online Reviews
Xinjie Zhou, Xiaojun Wan, Jianguo Xiao

Collaborative Topic Ranking: Leveraging Item Meta-Data for Sparsity Reduction
Weilong Yao, Jing He, Hua Wang, Yanchun Zhang, Jie Cao

AAAI-15 Outstanding Paper Honorable Mention: Predicting the Demographics of Twitter Users from Website Traffic Data
Aron Culotta, Nirmal Kumar Ravi, Jennifer Cutler

Poster Ads

Effectively Predicting Whether and When a Topic Will Become Prevalent in a Social Network
Weiwei Liu, Zhi-Hong Deng, Xiuwen Gong, Frank Jiang, Ivor W. Tsang

DynaDiffuse: A Dynamic Diffusion Model for Continuous Time Constrained Influence Maximization
Miao Xie, Qiusong Yang, Qing Wang, Gao Cong, Gerard de Melo

On Information Coverage for Location Category Based Point-of-Interest Recommendation
Xuefeng Chen, Yifeng Zeng, Gao Cong, Shengchao Qin, Yanping Xiang, Yuanshun Dai

Will You "Reconsume" the Near Past? Fast Prediction on Short-Term Reconsumption Behaviors
Jun Chen, Chaokun Wang, Jianmin Wang

Kernel Density Estimation for Text-Based Geolocation
Mans Hulden, Miikka Silfverberg, Jerid Francom

FACES: Diversity-Aware Entity Summarization Using Incremental Hierarchical Conceptual Clustering
Kalpa Gunaratna, Krishnaprasad Thirunarayan, Amit Sheth

Modeling with Node Degree Preservation Can Accurately Find Communities
Di Jin, Zheng Chen, Dongxiao He and Weixiong Zhang

TEXAS V–VI

Knowledge Representation & Reasoning 2

Talks

Easily Accessible Paper: Pearl's Causality in a Logical Setting
Alexander Bochman, Vladimir Lifschitz

Projection in the Epistemic Situation Calculus with Belief Conditionals
Christoph Schwering, Gerhard Lakemeyer

An Abstract View on Modularity in Knowledge Representation
Yuliya Lierler, Miroslaw Truszczynski

Belief Revision Games
Nicolas Schwind, Katsumi Inoue, Gauvain Bourgne, Sébastien Konieczny, Pierre Marquis

Poster Ads

Action Language BC+: Preliminary Report
Joseph Babb, Joohyung Lee

XPath for DL Ontologies
Egor V. Kostylev, Juan L. Reutter, Domagoj Vrgoc

Ontology Module Extraction via Datalog Reasoning
Ana Armas Romero, Mark Kaminski, Bernardo Cuenca Grau, Ian Horrocks

Belief Revision with General Epistemic States
Hua Meng, Hui Kou, Sanjiang Li

HILL COUNTRY AB

Planning and Scheduling 2

Talks

This Time the Robot Settles for a Cost: A Quantitative Approach to Temporal Logic Planning with Partial Satisfaction
Morteza Lahijanian, Shaull Almagor, Dror Fried, Lydia E. Kavraki, Moshe Y. Vardi

Strong Temporal Planning with Uncontrollable Durations: A State-Space Approach
Alessandro Cimatti, Andrea Micheli, Marco Roveri

Robustness in Probabilistic Temporal Planning
Jeb Brooks, Emilia Reed, Alexander Gruver, James C. Boerkoel Jr.

Poster Ads

Resolving Over-Constrained Probabilistic Temporal Problems through Chance Constraint Relaxation
Peng Yu, Cheng Fang, Brian Williams

tBurton: A Divide and Conquer Temporal Planner
David Wang, Brian Williams

Optimal Cost Almost-Sure Reachability in POMDPs
Krishnendu Chatterjee, Martin Chmelík, Raghav Gupta, Ayush Kanodia

SMT-Based Nonlinear PDDL+ Planning
Daniel Bryce, Sicun Gao, David Musliner, Robert Goldman

Crowdsourced Action-Model Acquisition for Planning
Hankz Hankui Zhuo

Exploiting Submodular Value Function for Faster Dynamic Sensor Selection
Yash Satsangi, Shimon Whiteson, Frans A. Oliehoek

Transition Constraints for Parallel Planning
Nina Ghanbari Ghooshchi, Majid Namazi, M. A. Hakim Newton, Abdul Sattar

Multi-Objective MDPs with Conditional Lexicographic Reward Preferences
Kyle Hollins Wray, Shlomo Zilberstein, Abdel-Illah Mouaddib

Discretization of Temporal Models with Application to Planning with SMT
Jussi Rintanen

Chance-Constrained Scheduling via Conflict-Directed Risk Allocation
Andrew J. Wang, Brian C. Williams

Learning Hybrid Models with Guarded Transitions
Pedro Santana, Spencer Lane, Eric Timmons, Brian Williams, Carlos Forster

Planning over Multi-Agent Epistemic States: A Classical Planning Approach
Christian Muise, Vaishak Belle, Paolo Felli, Sheila McIlraith, Tim Miller, Adrian R. Pearce, Liz Sonenberg

BIG BEND

Natural Language Processing 1

Talks

Mining Query Subtopics from Questions in Community Question Answering
Yu Wu, Wei Wu, Zhoujun Li, Ming Zhou

Contrastive Unsupervised Word Alignment with Non-Local Features
Yang Liu, Maosong Sun

The Utility of Text: The Case of Amicus Briefs and the Supreme Court
Yanchuan Sim, Bryan R. Routledge, Noah A. Smith

Easily Accessible Paper: Multi-Document Summarization Based on Two-Level Sparse Representation Model
He Liu, Hongliang Yu, Zhi-Hong Deng

Poster Ads

Ranking with Recursive Neural Networks and Its Application to Multi-Document Summarization
Ziqiang Cao, Furu Wei, Li Dong, Sujian Li, Ming Zhou

Question/Answer Matching for CQA System via Combining Lexical and Sequential Information
Yikang Shen, Wenge Rong, Zhiwei Sun, Yuanxin Ouyang, Zhang Xiong

Towards Phrase-Based Language Model in Statistical Machine Translation
Jiajun Zhang, Shujie Liu, Mu Li, Ming Zhou, Chengqing Zong

Automatically Creating a Large Number of New Bilingual Dictionaries
Khang Nhut Lam, Feras Al Tarouti, Jugal Kalita

A Family of Latent Variable Convex Relaxations for IBM Model 2
Andrei Simion, Michael Collins, Clifford Stein

Extracting Adverse Drug Reactions from Social Media
Andrew Yates, Nazli Goharian, Ophir Frieder

TEXAS VII

Robotics: Science and Systems 2014 Presentations (RSS) 1

Correct High-level Robot Behavior in Environments with Unexpected Events
Kai Weng Wong, Rudiger Ehlers, Hadas Kress-Gazit

Hierarchical Semantic Labeling for Task-Relevant RGB-D Perception
Chenxia Wu, Ian Lenz, Ashutosh Saxena

Open-Vocabulary Object Retrieval
Sergio Guadarrama, Erik Rodner, Kate Saenko, Ning Zhang, Ryan Farrell, Jeff Donahue, Trevor Darrell

Active Reward Learning
Christian Daniel, Malte Viering, Jan Metz, Oliver Kroemer, Jan Peters

Multi-Heuristics A*
Sandip Aine, Siddharth Swaminathan, Venkatraman Narayanan, Victor Hwang, Maxim Likachev

HILL COUNTRY CD

IAAI-15: Semantic Web, Knowledge Based Systems, and Ontologies

Emerging: Leveraging Ontologies to Improve Model Generalization Automatically with Online Data Sources
Sasin Janpuangtong, Dylan A. Shell

Emerging: SKILL: A System for Skill Identification and Normalization
Meng Zhao, Faizan Javed, Ferosh Jacob, Matt McNair

Emerging: HACKAR: Helpful Advice for Code Knowledge and Attack Resilience
Ugur Kuter, Mark Burstein, J. Benton, Daniel Bryce, Jordan Thayer, Steve McCoy

3:10 - 3:30

Coffee Break

Tuesday January 27 — 3:30 PM – 5:45 PM

3:30 - 4:45

TEXAS I

Machine Learning 3

Talks

Probabilistic Attributed Hashing
Mingdong Ou, Peng Cui, Jun Wang, Fei Wang, Wenwu Zhu

The Boundary Forest Algorithm for Online Supervised and Unsupervised Learning
Charles Mathy, Nate Derbinsky, José Bento, Jonathan Rosenthal, Jonathan Yedidia

Lazier Than Lazy Greedy
Baharan Mirzasoleiman, Ashwinkumar Badanidiyuru, Amin Karbasi, Jan Vondrák, Andreas Krause

Transfer Feature Representation via Multiple Kernel Learning
Wei Wang, Hao Wang, Chen Zhang, Fanjiang Xu

Poster Ads

Relational Stacked Denoising Autoencoder for Tag Recommendation
Hao Wang, Xingjian Shi, Dit-Yan Yeung

Sample-Targeted Clinical Trial Adaptation
Ognjen Arandjelovic

Low-Rank Multi-View Learning in Matrix Completion for Multi-Label Image Classification
Meng Liu, Yong Luo, Dacheng Tao, Chao Xu, Yonggang Wen

Multi-Objective Reinforcement Learning with Continuous Pareto Frontier Approximation
Matteo Pirotta, Simone Parisi, Marcello Restelli

Efficient Active Learning of Halfspaces via Query Synthesis
Ibrahim Alabdulmohsin, Xin Gao, Xiangliang Zhang

V-MIN: Efficient Reinforcement Learning through Demonstrations and Relaxed Reward Demands
David Martínez, Guillem Alenyà, Carme Torras

Leveraging Features and Networks for Probabilistic Tensor Decomposition
Piyush Rai, Yingjian Wang, Lawrence Carin

TEXAS II–III

AI and the Web 2

Talks

TrustSVD: Collaborative Filtering with Both the Explicit and Implicit Influence of User Trust and of Item Ratings
Guibing Guo, Jie Zhang, Neil Yorke-Smith

Learning User-Specific Latent Influence and Susceptibility from Information Cascades
Yongqing Wang, Huawei Shen, Shenghua Liu, Xueqi Cheng

Causal Inference via Sparse Additive Models with Application to Online Advertising
Wei Sun, Pengyuan Wang, Dawei Yin, Jian Yang, Yi Chang

Acquiring Speech Transcriptions Using Mismatched Crowdsourcing
Preethi Jyothi, Mark Hasegawa-Johnson

Poster Ads

Modeling Status Theory in Trust Prediction
Ying Wang, Xin Wang, Jiliang Tang, Wanli Zuo, Guoyong Cai

On the Scalable Learning of Stochastic Blockmodel
Bo Yang, Xuehua Zhao

Bayesian Approach to Modeling and Detecting Communities in Signed Network
Bo Yang, Xuehua Zhao, Xueyan Liu

Learning Entity and Relation Embeddings for Knowledge Graph Completion
Yankai Lin, Zhiyuan Liu, Maosong Sun, Yang Liu, Xuan Zhu

Predicting Peer-to-Peer Loan Rates Using Bayesian Non-Linear Regression
Zsolt Bitvai, Trevor Cohn

An EBMC-Based Approach to Selecting Types for Entity Filtering
Jiwei Ding, Wentao Ding, Wei Hu, Yuzhong Qu

Relating Romanized Comments to News Articles by Inferring Multi-Glyphic Topical Correspondence
Goutham Tholpadi, Mrinal Kanti Das, Trapit Bansal, Chiranjib Bhattacharyya

TEXAS V–VI

Knowledge Representation & Reasoning 3

Talks

asprin: Customizing Answer Set Preferences without a Headache
Gerhard Brewka, James Delgrande, Javier Romero, Torsten Schaub

SMT-Based Validation of Timed Failure Propagation Graphs
Marco Bozzano, Alessandro Cimatti, Marco Gario, Andrea Micheli

Interactive Query-Based Debugging of ASP Programs
Kostyantyn Shchekotykhin

Stable Model Counting and Its Application in Probabilistic Logic Programming
Rehan Abdul Aziz, Geoffrey Chu, Christian Muise, Peter J. Stuckey

Poster Ads

Exploring the KD45$_n$ Property of a Kripke Model after the Execution of an Action Sequence
Tran Cao Son, Enrico Pontelli, Chitta Baral, Gregory Gelfond

Parallelized Hitting Set Computation for Model-Based Diagnosis
Dietmar Jannach, Thomas Schmitz, Kostyantyn Shchekotykhin

Verifying and Synthesising Multi-Agent Systems against One-Goal Strategy Logic Specifications
Petr Čermák, Alessio Lomuscio, Aniello Murano

Tractable Interval Temporal Propositional and Description Logics
Alessandro Artale, Roman Kontchakov, Vladislav Ryzhikov, Michael Zakharyaschev

Towards Tractable and Practical ABox Abduction over Inconsistent Description Logic Ontologies
Jianfeng Du, Kewen Wang, Yi-Dong Shen

HILL COUNTRY AB

Multiagent Systems 1

Talks

Efficient Task Sub-Delegation for Crowdsourcing
Han Yu, Chunyan Miao, Zhiqi Shen, Cyril Leung, Yiqiang Chen, Qiang Yang

Easily Accessible Paper: Multi-Agent Pathfinding as a Combinatorial Auction
Ofra Amir, Guni Sharon, Roni Stern

Easily Accessible Paper: On Fairness in Decision-Making under Uncertainty: Definitions, Computation, and Comparison
Chongjie Zhang, Julie A. Shah

Finding a Collective Set of Items: From Proportional Multirepresentation to Group Recommendation
Piotr Skowron, Piotr Faliszewski, Jérôme Lang

Poster Ads

Cupid: Commitments in Relational Algebra
Amit K. Chopra, Munindar P. Singh

Verification of Relational Multiagent Systems with Data Types
Diego Calvanese, Marco Montali, Giorgio Delzanno

Distributing Coalition Value Calculations to Coalition Members
Luke Riley, Katie Atkinson, Paul E. Dunne, Terry R. Payne

Matching with Dynamic Ordinal Preferences
Hadi Hosseini, Kate Larson, Robin Cohen

Cooperating with Unknown Teammates in Complex Domains: A Robot Soccer Case Study of Ad Hoc Teamwork
Samuel Barrett, Peter Stone

BIG BEND

Machine Learning 4

Talks

An Adaptive Gradient Method for Online AUC Maximization
Yi Ding, Peilin Zhao, Steven C.H. Hoi, Yew Soon Ong

Kernelized Online Imbalanced Learning with Fixed Budgets
Junjie Hu, Haiqin Yang, Irwin King, Michael R. Lyu, Anthony Man-Cho So

High-Performance Distributed ML at Scale through Parameter Server Consistency Models
Wei Dai, Abhimanu Kumar, Jinliang Wei, Qirong Ho, Garth Gibson, Eric P. Xing

Poster Ads

Unidimensional Clustering of Discrete Data Using Latent Tree Models
April Hua Liu, Leonard K. M. Poon, Nevin L. Zhang

SoF: Soft-Cluster Matrix Factorization for Probabilistic Clustering
Han Zhao, Pascal Poupart, Yongfeng Zhang, Martin Lysy

Robust Subspace Clustering via Thresholding Ridge Regression
Xi Peng, Zhang Yi, Huajin Tang

Detecting and Tracking Concept Class Drift and Emergence in Non-Stationary Fast Data Streams
Brandon S. Parker, Latifur Khan

10,000+ Times Accelerated Robust Subset Selection (ARSS)
Feiyun Zhu, Bin Fan, Xinliang Zhu, Ying Wang, Shiming Xiang, Chunhong Pan

Constrained NMF-Based Multi-View Clustering on Unmapped Data
Xianchao Zhang, Linlin Zong, Xinyue Liu, Hong Yu

The Queue Method: Handling Delay, Heuristics, Prior Data, and Evaluation in Bandits
Travis Mandel, Yun-En Liu, Emma Brunskill, Zoran Popović

Maximin Separation Probability Clustering
Gao Huang, Jianwen Zhang, Shiji Song, Zheng Chen

Learning Robust Locality Preserving Projection via p-Order Minimization
Hua Wang, Feiping Nie, Heng Huang

Coupled Interdependent Attribute Analysis on Mixed Data
Can Wang, Chi-Hung Chi, Wei Zhou, Raymond Wong

Online Bandit Learning for a Special Class of Non-Convex Losses
Lijun Zhang, Tianbao Yang, Rong Jin, Zhi-Hua Zhou

Budgeted Prediction with Expert Advice
Kareem Amin, Satyen Kale, Gerald Tesauro, Deepak Turaga

Large-Scale Multi-View Spectral Clustering via Bipartite Graph
Yeqing Li, Feiping Nie, Heng Huang, Junzhou Huang

A Convex Formulation for Spectral Shrunk Clustering
Xiaojun Chang, Feiping Nie, Zhigang Ma, Yi Yang, Xiaofang Zhou

The Dynamic Chinese Restaurant Process via Birth and Death Processes
Rui Huang, Fengyuan Zhu, Pheng-Ann Heng

TEXAS VII

Senior Member Blue Sky Talks Session 1

Speech Adaptation in Extended Ambient Intelligence Environments
Bonnie J. Dorr, Lucian Galescu, Ian Perera, Kristy Hollingshead-Seitz, David Atkinson, Micah Clark, William Clancey, Yorick Wilks, Eric Fosler-Lussier

Impact of Modeling Languages on the Theory and Practice in Planning Research
Jussi Rintanen

Blended Planning and Acting: Preliminary Approach, Research Challenges
Dana S. Nau, Malik Ghallab, Paolo Traverso

Building Strong Semi-Autonomous Systems
Shlomo Zilberstein

Steering Evolution Strategically: Computational Game Theory and Opponent Exploitation for Treatment Planning, Drug Design, and Synthetic Biology
Tuomas Sandholm

HILL COUNTRY CD

IAAI-15: E-Commerce & Social Media

Deployed: Planned Protest Modeling in News and Social Media
Sathappan Muthiah, Bert Huang, Jaime Arredondo, David Mares, Lise Getoor, Graham Katz, Naren Ramakrishnan

Deployed: Position Assignment on an Enterprise Level Using Combinatorial Optimization
Leonard Kinnaird-Heether, Chris Dorman

4:45 - 5:45

Long Break

Tuesday January 27 — 5:45 PM – 8:45 PM

5:45 - 7:15

TEXAS BALLROOM

AAAI-15 Shakey Celebration

The Shakey Celebration will include a panel with Ed Feigenbaum, Peter Hart, and Nils Nilsson, along with other highlights of this historic project.

7:15 - 8:45

ZILKER BALLROOM

AAAI-15 Poster / Demo Reception 1

The Poster / Demo Reception will include technical poster presentations by authors of all papers presented today as Poster Ads, as well as the demos listed below. Doctoral Consortium posters will also be presented (listed below), and robotics exhibitions, Virtual Agents demos ((listed below), and RoboCup exhibitions will be available.

AAAI-15 Technical Demos

Bottom-Up Demand Response by Following Local Energy Generation Voluntarily
Tobias Linnenberg, Alexander Fay, Michael Kaisers

The Network Data Repository with Interactive Graph Analytics and Visualization
Ryan A. Rossi, Nesreen K. Ahmed

World WordNet Database Structure: An Efficient Schema for Storing Information of WordNets of the World
Hanumant Redkar, Sudha Bhingardive, Diptesh Kanojia, Pushpak Bhattacharyya

Towards Cognitive Automation of Data Science
Alain Biem, Maria A. Butrico, Mark D. Feblowitz, Tim Klinger, Yuri Malitsky, Kenney Ng, Adam Perer, Chandra Reddy, Anton V. Riabov, Horst Samulowitz, Daby Sow, Gerald Tesauro, Deepak Turaga

VecLP: A Realtime Video Recommendation System for Live TV Programs
Sheng Gao, Dai Zhang, Honggang Zhang, Jianxin Liao, Chao Huang, Yongsheng Zhang, Jun Guo

DeepTutor: An Effective, Online Intelligent Tutoring System that Promotes Deep Learning
Vasile Rus, Nobal B. Niraula, Rajendra Banjade

Cognitive Master Teacher
Raghu Krishnapuram, Luis A. Lastras, Satya Nitta

AAAI-15 Doctoral Consortium Abstract Posters

Modeling Eye Movements when Reading Microblogs
Maria Barrett, Anders Søgaard

Exploiting the Structure of Distributed Constraint Optimization Problems
Ferdinando Fioretto

Realistic Assumptions for Attacks on Elections
Zack Fitzsimmons

Social Hierarchical Learning
Bradley Hayes

Multivariate Conditional Anomaly Detection and Its Clinical Application
Charmgil Hong, Milos Hauskrecht

Probabilistic Planning with Risk-Sensitive Criterion
Ping Hou

Entity Resolution in a Big Data Framework
Mayank Kejriwal

Non-Classical Planning for Robotic Applications
Scott Kiesel

Transfer Learning-Based Co-Run Scheduling for Heterogeneous Datacenters
Wei Kuang, Laura E. Brown, Zhenlin Wang

HVAC-Aware Occupancy Scheduling (Extended Abstract)
Boon-Ping Lim

Scalable Agent Modeling for Large Multiagent Systems
Carrie Rebhuhn

Explaining Answer Set Programming in Argumentative Terms
Claudia Schulz

Optimal Multi-Agent Pathfinding Algorithms
Guni Sharon

Multi-Agent Team Formation: Solving Complex Problems by Aggregating Opinions
Leandro Soriano Marcolino

Scaling-Up Inference in Markov Logic
Deepak Venugopal

Risk-Aware Scheduling throughout Planning and Execution
Andrew J. Wang

Virtual Agents Demos

Social Simulation with Virtual Agents
Arnav Jhala

Cerebella: Automatic Generation of Nonverbal Behavior for Virtual Humans
Margot Lhommet, Yuyu Xu, Stacy Marsella

Scheherazade: Crowd-Powered Interactive Narrative Generation
Boyang Li, Mark O. Riedl

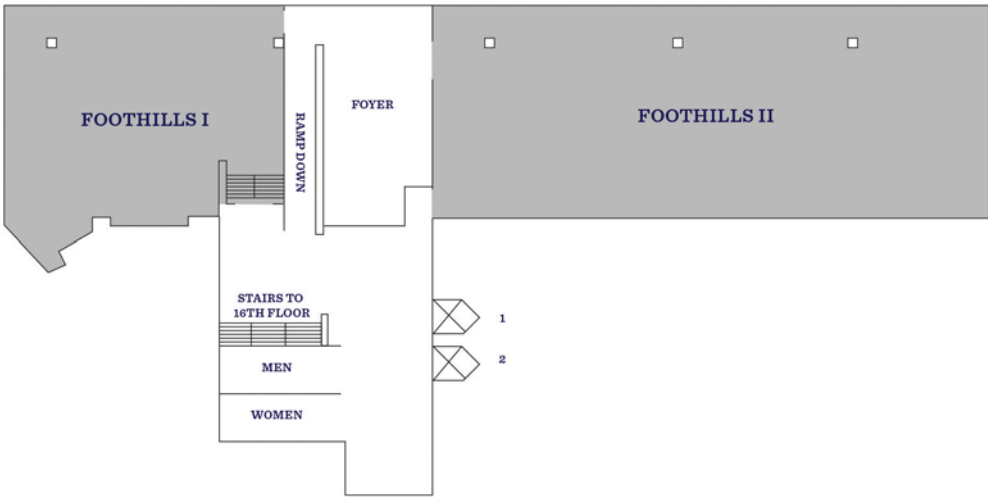
SimSensei Demonstration: A Perceptive Virtual Human Interviewer for Healthcare Applications
Louis-Philippe Morency, Giota Stratou, David DeVault, Arno Hartholt, Margaux Lhommet, Gale Lucas, Fabrizio Morbini, Kallirroi Georgila, Stefan Scherer, Jonathan Gratch, Stacy Marsella, David Traum, Albert Rizzo

LOL — Laugh Out Loud
Florian Pecune, Beatrice Biancardi, Yu Ding, Catherine Pelachaud, Maurizio Mancini, Giovanna Varni, Antonio Camurri, Gualtiero Volpe

Using Social Relationships to Control Narrative Generation
Julie Porteous, Fred Charles, Marc Cavazza

Interactive Narrative Planning in *The Best Laid Plans*
Stephen G. Ware, R. Michael Young, Phillip Wright, Christian Stith

Hyatt Regency Austin Seventeenth Floor



Wednesday, January 28 — 7:45 AM – 10:55 AM

7:45-8:45

FOOTHILLS II, 17TH FLOOR

Women's Mentoring Breakfast

9:00 - 9:15

ZILKER BALLROOM

Senior Member Blue Sky Award Talk 2

Intelligent Agents for Rehabilitation and Care of Disabled and Chronic Patients
Sarit Kraus

TEXAS BALLROOM I

What's Hot Talks 3

What's Hot in the Planning Competition
Stefan Edelkamp

TEXAS BALLROOM II–III

What's Hot Talks 3

What's Hot in Human Factors in Computing Systems
Wei Li

9:20 - 10:35

TEXAS I

Machine Learning 5

Talks

Compress and Control
Joel Veness, Marc G. Bellemare, Marcus Hutter, Alvin Chua, Guillaume Desjardins

Expressing Arbitrary Reward Functions as Potential-Based Advice
Anna Harutyunyan, Sam Devlin, Peter Vrancx, Ann Nowé

High Confidence Off-Policy Evaluation
Philip S. Thomas, Georgios Theocharous, Mohammad Ghavamzadeh

Improving Approximate Value Iteration with Complex Returns by Bounding
Robert Wright, Xingye Qiao, Lei Yu, Steven Loscalzo

Poster Ads

Unsupervised Cross-Domain Transfer in Policy Gradient Reinforcement Learning via Manifold Alignment
Haitham Bou Ammar, Eric Eaton, Paul Ruvolo, Matthew E. Taylor

Optimal Column Subset Selection by A-Star Search
Hiromasa Arai, Crystal Maung, Haim Schweitzer

Policy Tree: Adaptive Representation for Policy Gradient
Ujjwal Das Gupta, Erik Talvitie, Michael Bowling

Don't Fall for Tuning Parameters: Tuning-Free Variable Selection in High Dimensions with the TREX
Johannes Lederer, Christian J. Müller

A Generalized Reduced Linear Program for Markov Decision Processes
Chandrashekar Lakshminarayanan, Shalabh Bhatnagar

Discriminative Feature Grouping
Lei Han, Yu Zhang

Exploiting Task-Feature Co-Clusters in Multi-Task Learning
Linli Xu, Aiqing Huang, Jianhui Chen, Enhong Chen

TEXAS II–III

AI and the Web 3

Talks

Content-Based Collaborative Filtering for News Topic Recommendation
Zhongqi Lu, Zhicheng Dou, Jianxun Lian, Xing Xie, Qiang Yang

Easily Accessible Paper: Are Features Equally Representative? A Feature-Centric Recommendation
Chenyi Zhang, Ke Wang, Ee-peng Lim, Qinneng Xu, Jianling Sun, Hongkun Yu

COT: Contextual Operating Tensor for Context-Aware Recommender Systems
Qiang Liu, Shu Wu and Liang Wang

A Personalized Interest-Forgetting Markov Model for Recommendations
Jun Chen, Chaokun Wang, Jianmin Wang

Poster Ads

Content-Aware Point of Interest Recommendation on Location-Based Social Networks
Huiji Gao, Jiliang Tang, Xia Hu, Huan Liu

Leveraging Social Foci for Information Seeking in Social Media
Suhas Ranganath, Jiliang Tang, Xia Hu, Hari Sundaram, Huan Liu

Extended Property Paths: Writing More SPARQL Queries in a Succinct Way
Valeria Fionda, Giuseppe Pirrò, Mariano P. Consens

Uniform Interpolation and Forgetting for *ALC* Ontologies with ABoxes
Patrick Koopmann, Renate A. Schmidt

Lower and Upper Bounds for SPARQL Queries over OWL Ontologies
Birte Glimm, Yevgeny Kazakov, Ilianna Kollia, Giorgos Stamou

Consistent Knowledge Discovery from Evolving Ontologies
Freddy Lécué and Jeff Z. Pan

Using Description Logics for RDF Constraint Checking and Closed-World Recognition
Peter F. Patel-Schneider

TEXAS V–VI

Knowledge Representation & Reasoning 4

Talks

Incremental Update of Datalog Materialisation: The Backward/Forward Algorithm
Boris Motik, Yavor Nenov, Robert Piro, Ian Horrocks

Instance-Driven Ontology Evolution in DL-Lite
Zhe Wang, Kewen Wang, Zhiqiang Zhuang, Guilin Qi

Existential Rule Languages with Finite Chase: Complexity and Expressiveness
Heng Zhang, Yan Zhang, Jia-Huai You

From Classical to Consistent Query Answering under Existential Rules
Thomas Lukasiewicz, Maria Vanina Martinez, Andreas Pieris, Gerardo I. Simari

Solving and Explaining Analogy Questions Using Semantic Networks
Adrian Boteanu, Sonia Chernova

HILL COUNTRY AB

Reasoning under Uncertainty 1

Talks

Bayesian Networks Specified Using Propositional and Relational Constructs: Combined, Data, and Domain Complexity
Fabio Gagliardi Cozman, Denis Deratani Mauá

Easily Accessible Paper: Learning Relational Sum-Product Networks
Aniruddh Nath, Pedro Domingos

Lifted Probabilistic Inference for Asymmetric Graphical Models
Guy Van den Broeck, Mathias Niepert

Linear-Time Gibbs Sampling in Piecewise Graphical Models
Hadi Mohasel Afshar, Scott Sanner, Ehsan Abbasnejad

Poster Ads

Recovering Causal Effects from Selection Bias
Elias Bareinboim, Jin Tian

Multi-Source Domain Adaptation: A Causal View
Kun Zhang, Mingming Gong, Bernhard Schölkopf

On the Decreasing Power of Kernel and Distance Based Nonparametric Hypothesis Tests in High Dimensions
Aaditya Ramdas, Sashank J. Reddi, Barnabás Póczos, Aarti Singh, Larry Wasserman

Submodular Surrogates for Value of Information
Yuxin Chen, Shervin Javdani, Amin Karbasi, J. Andrew Bagnell, Siddhartha Srinivasa, Andreas Krause

Value of Information Based on Decision Robustness
Suming Chen, Arthur Choi, Adnan Darwiche

Nonstationary Gaussian Process Regression for Evaluating Clinical Laboratory Test Sampling Strategies
Thomas A. Lasko

Loss-Calibrated Monte Carlo Action Selection
Ehsan Abbasnejad, Justin Domke, Scott Sanner

BIG BEND

Machine Learning 7

Talks

Pathway Graphical Lasso
Maxim Grechkin, Maryam Fazel, Daniela Witten, Su-In Lee

Easily Accessible Paper: PD Disease State Assessment in Naturalistic Environments Using Deep Learning
Nils Yannick Hammerla, James M. Fisher, Peter Andras, Lynn Rochester, Richard Walker, Thomas Plötz

Clustering Longitudinal Clinical Marker Trajectories from Electronic Health Data: Applications to Phenotyping and Endotype Discovery
Peter Schulam, Fredrick Wigley, Suchi Saria

Poster Ads

The Hybrid Nested/Hierarchical Dirichlet Process and Its Application to Topic Modeling with Word Differentiation
Tengfei Ma, Issei Sato, Hiroshi Nakagawa

Collaborative Filtering with Localised Ranking
Charanpal Dhanjal, Stéphan Clémençon, Romaric Gaudel

Using Machine Teaching to Identify Optimal Training-Set Attacks on Machine Learners
Shike Mei, Xiaojin Zhu

Mining User Interests from Personal Photos
Pengtao Xie, Yulong Pei, Yuan Xie, Eric Xing

Self-Paced Learning for Matrix Factorization
Qian Zhao, Deyu Meng, Lu Jiang, Qi Xie, Zongben Xu, Alexander G. Hauptmann

Detecting Change Points in the Large-Scale Structure of Evolving Networks
Leto Peel, Aaron Clauset

Deep Modeling Complex Couplings within Financial Markets
Wei Cao, Liang Hu, Longbing Cao

A Multivariate Timeseries Modeling Approach to Severity of Illness Assessment and Forecasting in ICU with Sparse, Heterogeneous Clinical Data
Marzyeh Ghassemi, Marco A. F. Pimentel, Tristan Naumann, Thomas Brennan, David A. Clifton, Peter Szolovits, Mengling Feng

Spectral Label Refinement for Noisy and Missing Text Labels
Yangqiu Song, Chenguang Wang, Ming Zhang, Hailong Sun, Qiang Yang

On the Equivalence of Linear Discriminant Analysis and Least Squares
Kibok Lee, Junmo Kim

Inertial Hidden Markov Models: Modeling Change in Multivariate Time Series
George D. Montañez, Saeed Amizadeh, Nikolay Laptev

R1SVM: A Randomised Nonlinear Approach to Large-Scale Anomaly Detection
Sarah M. Erfani, Mahsa Baktashmotlagh, Sutharshan Rajasegarar, Shanika Karunasekera, Chris Leckie

Outlier-Robust Convex Segmentation
Itamar Katz, Koby Crammer

Aligning Mixed Manifolds
Thomas Boucher, Clifton J. Carey, Sridhar Mahadevan, Melinda Darby Dyar

A Regularized Linear Dynamical System Framework for Multivariate Time Series Analysis
Zitao Liu, Milos Hauskrecht

TEXAS VII

Classic Paper Award Talk / Robotics Student Fellowship Talks

Classic Paper Award Talk: Statistical Parsing with a Context-Free Grammar and Word Statistics
Eugene Charniak

Robotics Student Fellowship Talks 1

Task-Oriented Planning for Manipulating Articulated Mechanisms Under Model Uncertainty
Venkatraman Narayanan

Learning the State of the World: Object-based State Estimation for Mobile-Manipulation Robots
Lawson L.S. Wong

Time-Optimal Learning, Exploration and Control for Mobile Robots in (Partially) Known Environments
Vladislav Nenchev

Plan Execution Monitoring through Detection of Unmet Expectations about Action Outcomes
Juan Pablo Mendoza

Representation Learning for Robotics
Rico Jonschkowski

A Divide and Conquer Approach to Control Complex Continuous State Dynamic Systems using Hierarchical Reinforcement Learning
Sean Harris

HILL COUNTRY CD

IAAI-15: Crowdsouring and NLP

Emerging: Aggregating User Input in Ecology Citizen Science Projects
Greg Hines, Alexandra Swanson, Margaret Kosmala, Chris Lintott

Emerging: Using Qualitative Spatial Logic for Validating Crowd-Sourced Geospatial Data
Heshan Du, Hai Nguyen, Natasha Alechina, Brian Logan, Michael Jackson, John Goodwin

Emerging: Named Entity Recognition in Travel-Related Search Queries
Brooke Cowan, Sven Zethelius, Brittany Luk, Teodora Baras, Prachi Ukarde, Daodao Zhang

10:35 - 10:55

Coffee Break

Wednesday, January 28 — 10:55 AM – 12:10 PM

10:55 - 12:10

TEXAS I

Machine Learning 6

Talks

Obtaining Well Calibrated Probabilities Using Bayesian Binning
Mahdi Pakdaman Naeini, Gregory F. Cooper, Milos Hauskrecht

Easily Accessible Paper: Modelling Class Noise with Symmetric and Asymmetric Distributions
Jun Du, Zhihua Cai

Bayesian Model Averaging Naive Bayes (BMA-NB): Averaging over an Exponential Number of Feature Models in Linear Time
Ga Wu, Scott Sanner, Rodrigo F. S. C. Oliveira

Improving Multi-Step Prediction of Learned Time Series Models
Arun Venkatraman, Martial Hebert, J. Andrew Bagnell

Poster Ads

A Closed Form Solution to Multi-View Low-Rank Regression
Shuai Zheng, Xiao Cai, Chris Ding, Feiping Nie, Heng Huang

Tensor-Variate Restricted Boltzmann Machines
Tu Dinh Nguyen, Truyen Tran, Dinh Phung, Svetha Venkatesh

Structured Sparsity with Group-Graph Regularization
Xin-Yu Dai, Jian-Bing Zhang, Shu-Jian Huang, Jia-Jun Chen, Zhi-Hua Zhou

Exact Recoverability of Robust PCA via Outlier Pursuit with Tight Recovery Bounds
Hongyang Zhang, Zhouchen Lin, Chao Zhang, Edward Y. Chang

Personalized Tag Recommendation through Nonlinear Tensor Factorization Using Gaussian Kernel
Xiaomin Fang, Rong Pan, Guoxiang Cao, Xiuqiang He, Wenyuan Dai

Embedded Unsupervised Feature Selection
Suhang Wang, Jiliang Tang, Huan Liu

Optimal Estimation of Multivariate ARMA Models
Martha White, Junfeng Wen, Michael Bowling, Dale Schuurmans

A Nonconvex Relaxation Approach for Rank Minimization Problems
Xiaowei Zhong, Linli Xu, Yitan Li, Zhiyuan Liu, Enhong Chen

TEXAS II–III

AI and the Web 4

Talks

A New Granger Causal Model for Influence Evolution in Dynamic Social Networks: The Case of DBLP
Belkacem Chikhaoui, Mauricio Chiazzaro, Shengrui Wang

Sampling Representative Users from Large Social Networks
Jie Tang, Chenhui Zhang, Keke Cai, Li Zhang, Zhong Su

Incorporating Assortativity and Degree Dependence into Scalable Network Models
Stephen Mussmann, John Moore, Joseph J. Pfeiffer III, Jennifer Neville

Online Bayesian Models for Personal Analytics in Social Media
Svitlana Volkova, Benjamin Van Durme

Poster Ads

On the Impossibility of Convex Inference in Human Computation
Nihar B. Shah, Dengyong Zhou

Crowdsourcing Complex Workflows under Budget Constraints
Long Tran-Thanh, Trung Dong Huynh, Avi Rosenfeld, Sarvapali D. Ramchurn, Nicholas R. Jennings

Novel Mechanisms for Online Crowdsourcing with Unreliable, Strategic Agents
Praphul Chandra, Yadati Narahari, Debmalya Mandal, Prasenjit Dey

Minimizing User Involvement for Accurate Ontology Matching Problems
Anika Schumann, Freddy Lecue

Robust Image Sentiment Analysis Using Progressively Trained and Domain Transferred Deep Networks
Quanzeng You, Jiebo Luo, Hailin Jin, Jianchao Yang

Perceiving Group Themes from Collective Social and Behavioral Information
Peng Cui, Tianyang Zhang, Fei Wang, Peng He

Exploring Key Concept Paraphrasing Based on Pivot Language Translation for Question Retrieval
Wei-Nan Zhang, Zhao-Yan Ming, Yu Zhang, Ting Liu, Tat-Seng Chua

TEXAS V–VI

Heuristic Search and Optimization 1

Talks

Recursive Best-First Search with Bounded Overhead
Matthew Hatem, Scott Kiesel, Wheeler Ruml

Limitations of Front-to-End Bidirectional Heuristic Search
Joseph K. Barker, Richard E. Korf

Value-Directed Compression of Large-Scale Assignment Problems
Tyler Lu, Craig Boutilier

Poster Ads

Algorithm Selection via Ranking
Richard J. Oentaryo, Stephanus Daniel Handoko, Hoong Chuin Lau

Solving Hard Stable Matching Problems via Local Search and Cooperative Parallelization
Danny Munera, Daniel Diaz, Salvador Abreu, Francesca Rossi, Vijay Saraswat, Philippe Codognet

Optimizing the CVaR via Sampling
Aviv Tamar, Yonatan Glassner, Shie Mannor

A Mathematical Programming-Based Approach to Determining Objective Functions from Qualitative and Subjective Comparisons
Takayuki Yoshizumi

Lagrangian Decomposition Algorithm for Allocating Marketing Channels
Daisuke Hatano, Takuro Fukunaga, Takanori Maehara, Ken-ichi Kawarabayashi

An Efficient Forest-Based Tabu Search Algorithm for the Split-Delivery Vehicle Routing Problem
Zizhen Zhang, Huang He, Zhixing Luo, Hu Qin, Songshan Guo

Multi-Agent Path Finding on Strongly Biconnected Graphs
Adi Botea, Pavel Surynek

Two Weighting Local Search for Minimum Vertex Cover
Shaowei Cai, Jinkun Lin, Kaile Su

Exploiting Variable Associations to Configure Efficient Local Search in Large-Scale Set Partitioning Problems
Shunji Umetani

Improved Local Search for Binary Matrix Factorization
Seyed Hamid Mirisaee, Eric Gaussier, Alexandre Termier

Stochastic Local Search for Satisfiability Modulo Theories.
Andreas Fröhlich, Armin Biere, Christoph M. Wintersteiger, Youssef Hamadi

TDS+: Improving Temperature Discovery Search
Yeqin Zhang, Martin Müller

HILL COUNTRY AB

Reasoning under Uncertainty 2

Talks

An Improved Lower Bound for Bayesian Network Structure Learning
Xiannian Fan, Changhe Yuan

Spectral Learning of Predictive State Representations with Insufficient Statistics
Alex Kulesza, Nan Jiang, Satinder Singh

Knowledge-Based Probabilistic Logic Learning
Phillip Odom, Tushar Khot, Reid Porter, Sriraam Natarajan

Learning Relational Kalman Filtering
Jaesik Choi, Eyal Amir, Tianfang Xu, Albert J. Valocchi

Poster Ads

An Exact Algorithm for Solving Most Relevant Explanation in Bayesian Networks
Xiaoyuan Zhu, Changhe Yuan

Support Consistency of Direct Sparse-Change Learning in Markov Networks
Song Liu, Taiji Suzuki, Masashi Sugiyama

Concurrent PAC RL
Zhaohan Daniel Guo, Emma Brunskill

Nonparametric Scoring Rules
Erik Zawadzki, Sébastien Lahaie

Probabilistic Graphical Models for Boosting Cardinal and Ordinal Peer Grading in MOOCs
Fei Mi, Dit-Yan Yeung

Learning to Reject Sequential Importance Steps for Continuous-Time Bayesian Networks
Jeremy C. Weiss, Sriraam Natarajan, C. David Page

Representing Aggregators in Relational Probabilistic Models
David Buchman, David Poole

BIG BEND

Game Theory & Economic Paradigms 2

Talks

On a Competitive Secretary Problem
Anna Karlin, Eric Lei

Computing Nash Equilibrium in Interdependent Defense Games
Hau Chan, Luis E. Ortiz

Combining Compact Representation and Incremental Generation in Large Games with Sequential Strategies
Branislav Bosansky, Albert Xin Jiang, Milind Tambe, Christopher Kiekintveld

A Graphical Representation for Games in Partition Function Form
Oskar Skibski, Tomasz P. Michalak, Yuko Sakurai, Michael Wooldridge, Makoto Yokoo

Poster Ads

Congestion Games with Distance-Based Strict Uncertainty
Reshef Meir, David Parkes

Efficient Computation of Semivalues for Game-Theoretic Network Centrality
Piotr L. Szczepański, Mateusz K. Tarkowski, Tomasz P. Michalak, Paul Harrenstein, Michael Wooldridge

Optimal Machine Strategies to Commit to in Two-Person Repeated Games
Song Zuo, Pingzhong Tang

Security Games with Protection Externalities
Jiarui Gan, Bo An, Yevgeniy Vorobeychik

Online Learning and Profit Maximization from Revealed Preferences
Kareem Amin, Rachel Cummings, Lili Dworkin, Michael Kearns, Aaron Roth

Learning Valuation Distributions from Partial Observation
Avrim Blum, Yishay Mansour, Jamie Morgenstern

Sequence-Form Algorithm for Computing Stackelberg Equilibria in Extensive-Form Games
Branislav Bosansky, Jirí Cermák

TEXAS VII

Senior Member Blue Sky Talks 2

Towards a Programmer's Apprentice (Again)
Howard Shrobe, Boris Katz, Randall Davis

Conducting Neuroscience to Guide the Development of AI
Jeffrey Mark Siskind

Machanism Learning with Mechanism Induced Data
Tie-Yan Liu, Wei Chen, Tao Qin

Challenges in Resource and Cost Allocation
Toby Walsh

Explaining Watson: Polymath Style
Wlodek Zadrozny, Valeria de Paiva, Lawrence S. Moss

HILL COUNTRY CD

IAAI-15: Challenge Paper Session

Challenge: The Winograd Schema Challenge: Evaluating Progress in Commonsense Reasoning
Leora Morgenstern, Charles L. Ortiz. Jr.

Challenge: Elementary School Science and Math Tests as a Driver for AI: Take the Aristo Challenge!
Peter Clark

Challenge: Time-Varying Clusters in Large-Scale Flow Cytometry
Jeremy Hyrkas, Daniel Halperin, Bill Howe

Wednesday, January 28 — 12:10 PM – 2:50 PM

12:10 - 1:40

Lunch Break / Student Abstract Talks / AAAI Lunch with a Fellow Program

TEXAS I

Student Abstract Talks

Poster Ads

Representation Discovery for MDPs Using Bisimulation Metrics
Sherry Shanshan Ruan, Gheorghe Comanici, Prakash Panangaden, Doina Precup

"Is It Rectangular?" Using I Spy as an Interactive, Game-Based Approach to Multimodal Robot Learning
Natalie Paige Parde, Michalis Papakostas, Konstantinos Tsiakas, Rodney D. Nielsen

Multimedia Data for the Visually Impaired
Niket Tandon, Shekhar Sharma, Tanima Makkad

Combining Machine Learning and Crowdsourcing for Better Understanding Commodity Reviews
Heting Wu, Hailong Sun, Yili Fang, Kefan Hu, Yongqing Xie, Yangqiu Song, Xudong Liu

Just-in-Time Hierarchical Constraint Decomposition
Valentin Mayer-Eichberger

Active Learning for Informative Projection Retrieval
Madalina Fiterau, Artur Dubrawski

Global Policy Construction in Modular Reinforcement Learning
Ruohan Zhang, Zhao Song, Dana H. Ballard

Handling Uncertainty in Answer Set Programming
Yi Wang, Joohyung Lee

Query Abduction for *ELH* Ontologies
Mahsa Chitsaz, Zhe Wang, Kewen Wang

Planning with Numeric Timed Initial Fluents
Chiara Piacentini, Maria Fox, Derek Long

A New Computational Intelligence Model for Long-Term Prediction of Solar and Geomagnetic Activity
Mahboobeh Parsapoor, John Brooke, Bertil Svensson

Every Team Deserves a Second Chance: Identifying When Things Go Wrong
Vaishnavh Nagarajan, Leandro Soriano Marcolino, Milind Tambe

Touchless Telerobotic Surgery - Is It Possible at All?
Tian Zhou, Maria Eugenia Cabrera, Juan Pablo Wachs

GEF: A Self-Programming Robot Using Grammatical Evolution
Charles Peabody, Jennifer Seitzer

Language Independent Feature Extractor
Young-Seob Jeong, Ho-Jin Choi

Self-Organized Collective Decision-Making in a 100-Robot Swarm
Gabriele Valentini, Heiko Hamann, Marco Dorigo

Leveraging Common Structure to Improve Prediction across Related Datasets
Matt Barnes, Nick Gisolfi, Madalina Fiterau, Artur Dubrawski

Acronym Disambiguation Using Word Embedding
Chao Li, Lei Ji, Jun Yan

Graphical Representation of Assumption-Based Argumentation
Claudia Schulz

Finding Meaningful Gaps to Guide Data Acquisition for a Radiation Adjudication System
Nick Gisolfi, Madalina Fiterau, Artur Dubrawski

Modelling Individual Negative Emotion Spreading Process with Mobile Phones
Zhanwei Du, Yongjian Yang, Chuang Ma, Yuan Bai

Time-Sensitive Opinion Mining for Prediction
Wenting Tu, David Cheung, Nikos Mamoulis

Sorted Neighborhood for the Semantic Web
Mayank Kejriwal, Daniel P. Miranker

A Goal-Based Model of Personality for Planning-Based Narrative Generation
Julio César Bahamón, Camille Barot, R. Michael Young

1:40 - 2:30

ZILKER BALLROOM

AAAI-15 Invited Talk

Deep Learning
Geoffrey Hinton (University of Toronto and Google Inc)

Introduction by Stuart Russell

TEXAS BALLROOM I-III

IAAI-15 Invited Talk

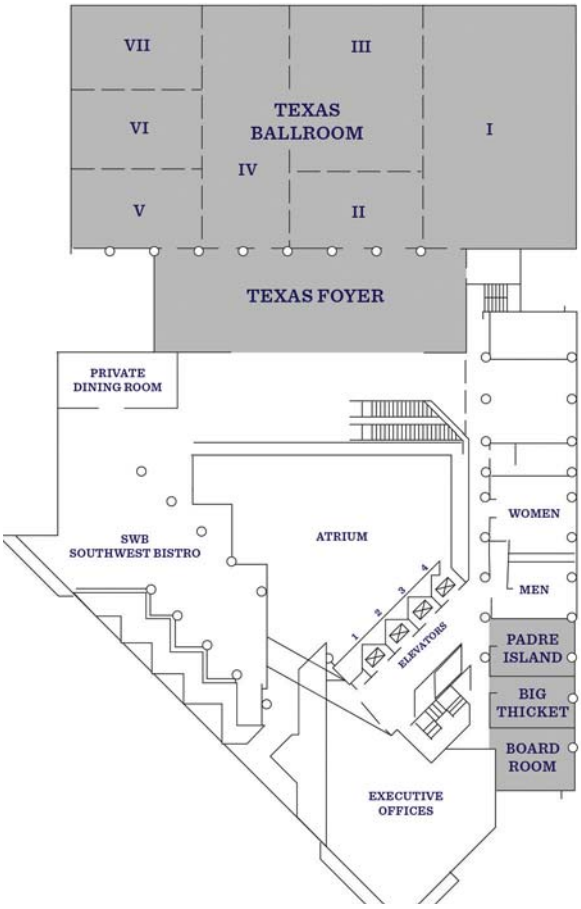
Title TBA
Rayid Ghani (University of Chicago)

Introduction by Peter Yeh

2:30 - 2:50

Coffee Break

Hyatt Regency Austin Second Floor



Wednesday, January 28 — 2:50 PM – 5:30 PM

2:50 - 4:30

TEXAS I

Natural Language Processing 2

Talks

Extracting Verb Expressions Implying Negative Opinions
Huayi Li, Arjun Mukherjee, Jianfeng Si, Bing Liu

Unsupervised Phrasal Near-Synonym Generation from Text Corpora
Dishan Gupta, Jaime Carbonell, Anatole Gershman, Steve Klein, David Miller

Phrase Type Sensitive Tensor Indexing Model for Semantic Composition
Yu Zhao, Zhiyuan Liu, Maosong Sun

Learning Word Representations from Relational Graphs
Danushka Bollegala, Takanori Maehara, Yuichi Yoshida, Ken-ichi Kawarabayashi

Sense-Aware Semantic Analysis: A Multi-Prototype Word Representation Model Using Wikipedia
Zhaohui Wu, C. Lee Giles

Easily Accessible Paper: Chinese Common Noun Phrase Resolution: An Unsupervised Probabilistic Model Rivaling Supervised Resolvers
Chen Chen, Vincent Ng

Poster Ads

Microblog Sentiment Classification with Contextual Knowledge Regularization
Fangzhao Wu, Yangqiu Song, Yongfeng Huang

Generating Event Causality Hypotheses through Semantic Relations
Chikara Hashimoto, Kentaro Torisawa, Julien Kloetzer, Jong-Hoon Oh

Unsupervised Word Sense Disambiguation Using Markov Random Field and Dependency Parser
Devendra Singh Chaplot, Pushpak Bhattacharyya, Ashwin Paranjape

Semantic Lexicon Induction from Twitter with Pattern Relatedness and Flexible Term Length
Ashequl Qadir, Pablo N. Mendes, Daniel Gruhl, Neal Lewis

Refer-to-as Relations as Semantic Knowledge
Song Feng, Sujith Ravi, Ravi Kumar, Polina Kuznetsova, Wei Liu, Alexander C. Berg, Tamara L. Berg, Yejin Choi

TEXAS II–III

Computational Sustainability and AI 2

Talks

Aggregating Electric Cars to Sustainable Virtual Power Plants: The Value of Flexibility in Future Electricity Markets
Micha Kahlen, Wolfgang Ketter

Sharing Rides with Friends: A Coalition Formation Algorithm for Ridesharing
Filippo Bistaffa, Alessandro Farinelli, Sarvapali D. Ramchurn

HVAC-Aware Occupancy Scheduling
BoonPing Lim, Menkes van den Briel, Sylvie Thiébaux, Scott Backhaus, Russell Bent

Pattern Decomposition with Complex Combinatorial Constraints: Application to Materials Discovery
Stefano Ermon, Ronan Le Bras, Santosh K. Suram, John M. Gregoire, Carla P. Gomes, Bart Selman, Robert B. van Dover

FutureMatch: Combining Human Value Judgments and Machine Learning to Match in Dynamic Environments
John P. Dickerson, Tuomas Sandholm

Poster Ads

Energy Usage Behavior Modeling in Energy Disaggregation via Marked Hawkes Process
Liangda Li, Hongyuan Zha

Recommending Positive Links in Signed Social Networks by Optimizing a Generalized AUC
Dongjin Song, David A. Meyer

Real-Time Predictive Optimization for Energy Management in a Hybrid Electric Vehicle
Alexander Styler, Illah Nourbakhsh

Incentivizing Users for Balancing Bike Sharing Systems
Adish Singla, Marco Santoni, Gábor Bartók, Pratik Mukerji, Moritz Meenen, Andreas Krause

Data Analysis and Optimization for (Citi)Bike Sharing
Eoin O'Mahony, David B. Shmoys

A Simulator of Human Emergency Mobility following Disasters: Knowledge Transfer from Big Disaster Data
Xuan Song, Quanshi Zhang, Yoshihide Sekimoto, Ryosuke Shibasaki, Nicholas Jing Yuan, Xing Xie

Risk Based Optimization for Improving Emergency Medical Systems
Sandhya Saisubramanian, Pradeep Varakantham, Hoong Chuin Lau

TEXAS V–VI

Knowledge Representation & Reasoning 5

Talks

How Many Diagnoses Do We Need?
Roni Stern, Meir Kalech, Shelly Rogov, Alexander Feldman

Knowledge Forgetting in Circumscription: A Preliminary Report
Yisong Wang, Kewen Wang, Zhe Wang, Zhiqiang Zhuang

Partial Meet Revision and Contraction in Logic Programs
Sebastian Binnewies, Zhiqiang Zhuang, Kewen Wang

A Syntax-Independent Approach to Forgetting in Disjunctive Logic Programs
James P. Delgrande, Kewen Wang

On the Role of Canonicity in Knowledge Compilation
Guy Van den Broeck, Adnan Darwiche

Learning Partial Lexicographic Preference Trees over Combinatorial Domains
Xudong Liu, Mirek Truszczynski

Poster Ads

A Comparison of Qualitative and Metric Spatial Relation Models for Scene Understanding
Akshaya Thippur, Chris Burbridge, Lars Kunze, Marina Alberti, John Folkesson, Patric Jensfelt, Nick Hawes

Propagating Ranking Functions on a Graph: Algorithms and Applications
Buyue Qian, Xiang Wang, Ian Davidson

HILL COUNTRY AB

Multiagent Systems 2

Talks

An Empirical Study on the Practical Impact of Prior Beliefs over Policy Types
Stefano V. Albrecht, Jacob W. Crandall, Subramanian Ramamoorthy

Incentives for Subjective Evaluations with Private Beliefs
Goran Radanovic, Boi Faltings

UT Austin Villa 2014: RoboCup 3D Simulation League Champion via Overlapping Layered Learning
Patrick MacAlpine, Mike Depinet, Peter Stone

Automated Analysis of Commitment Protocols Using Probabilistic Model Checking
Akin Günay, Song Songzheng, Yang Liu, Jie Zhang

Game-Theoretic Approach for Non-Cooperative Planning
Jaume Jordán, Eva Onaindia

Multi-Robot Auctions for Allocation of Tasks with Temporal Constraints
Ernesto Nunes, Maria Gini

Poster Ads

Facility Location with Double-Peaked Preferences
Aris Filos-Ratsikas, Minming Li, Jie Zhang, Qiang Zhang

Fast Convention Formation in Dynamic Networks Using Topological Knowledge
Mohammad Rashedul Hasan, Anita Raja, Ana Bazzan

A Counter Abstraction Technique for the Verification of Robot Swarms
Panagiotis Kouvaros, Alessio Lomuscio

BIG BEND

Cognitive Systems 1

Talks

Spontaneous Retrieval from Long-Term Memory for a Cognitive Architecture
Justin Li, John Laird

Automatic Ellipsis Resolution: Recovering Covert Information from Text
Marjorie McShane, Petr Babkin

Automated Construction of Visual-Linguistic Knowledge via Concept Learning from Cartoon Videos
Jung-Woo Ha, Kyung-Min Kim, Byoung-Tak Zhang

Ontology-Based Information Extraction with a Cognitive Agent
Peter Lindes, Deryle W. Lonsdale, David W. Embley

Extending Analogical Generalization with Near-Misses
Matthew D. McLure, Scott E. Friedman, Kenneth D. Forbus

Learning Plausible Inferences from Semantic Web Knowledge by Combining Analogical Generalization with Structured Logistic Regression
Chen Liang, Kenneth D. Forbus

Poster Ads

An Agent-Based Model of the Emergence and Transmission of a Language System for the Expression of Logical Combinations
Josefina Sierra-Santibáñez

Predicting Emotion Perception across Domains: A Study of Singing and Speaking
Biqiao Zhang, Emily Mower Provost, Robert Swedberg, Georg Essl

Constructing Models of User and Task Characteristics from Eye Gaze Data for User-Adaptive Information Highlighting
Matthew Gingerich, Cristina Conati

Bayesian Affect Control Theory of Self
Jesse Hoey, Tobias Schröder

TEXAS VII

Senior Member Summary Talks 1

Towards User-Adaptive Information Visualization
Cristina Conati, Giuseppe Carenini, Dereck Toker, Sébastien Lallé

On the Diagnosis of Cyber-Physical Production Systems: State-of-the-Art and Research Agenda
Oliver Niggemann, Volker Lohweg

Languages for Mining and Learning
Luc De Raedt

Abstraction for Solving Large Incomplete-Information Games
Tuomas Sandholm

HILL COUNTRY CD

IAAI-15: Healthcare

Deployed: Graph Analysis for Detecting Fraud, Waste, and Abuse in Healthcare Data
Juan Liu, Eric Bier, Aaron Wilson, Tomo Honda, Sricharan Kumar, Leilani Gilpin, John Guerra-Gomez, Daniel Davies

Emerging: Automated Problem List Generation from Electronic Medical Records in IBM Watson
Murthy Devarakonda, Ching-Huei Tsou

Emerging: Preventing HIV Spread in Homeless Populations Using PSINET
Amulya Yadav, Leandro Soriano Marcolino, Eric Rice, Robin Petering, Hailey Winetrobe, Harmony Rhoades, Milind Tambe, Heather Carmichael

4:30 - 5:30

Long Break

Wednesday, January 28 — 5:30 PM – 10:00 PM

5:30 - 6:30

TEXAS BALLROOM

AAAI-15 Community Meeting

AAAI welcomes all conference attendees to this inaugural AAAI community meeting, which will also serve as the AAAI Annual Business Meeting. Please join us as we explore current initiatives, and help chart the future course and objectives of AAAI.

Moderator: Thomas G. Dietterich, AAAI President

6:30 - 8:00

ZILKER BALLROOM

AAAI-15 Poster / Demo Reception 2

The Poster / Demo Reception will include technical poster presentations of all papers presented today as Poster Ads, as well as the demos listed below. Student Abstract posters of talks presented during today's lunch break will also be presented, and robotics exhibitions and game exhibits will be available.

AAAI-15 Technical Demos

A Planning-Based Assistance System for Setting Up a Home Theater
Pascal Bercher, Felix Richter, Thilo Hörnle, Thomas Geier, Daniel Höller, Gregor Behnke, Florian Nothdurft, Frank Honold, Wolfgang Minker, Michael Weber, Susanne Biundo

Inferring Latent User Properties from Texts Published in Social Media
Svitlana Volkova, Yoram Bachrach, Michael Armstrong, Vijay Sharma

Tartanian7: A Champion Two-Player No-Limit Texas Hold'em Poker-Playing Program
Noam Brown, Sam Ganzfried, Tuomas Sandholm

Circumventing Robots' Failures by Embracing Their Faults: A Practical Approach to Planning for Autonomous Construction
Stefan Witwicki, Francesco Mondada

On Correcting Misspelled Queries in Email Search
Abhijit Bhole, Raghavendra Udupa

Crow Motion Monitoring with Thermodynamics-Inspired Feature
Xinfeng Zhang, Su Yang, Yuan Yan Tang, Weishan Zhang

A Neural Probabilistic Model for Context Based Citation Recommendation
Wenyi Huang, Zhaohui Wu, Chen Liang, Prasenjit Mitra, C. Lee Giles

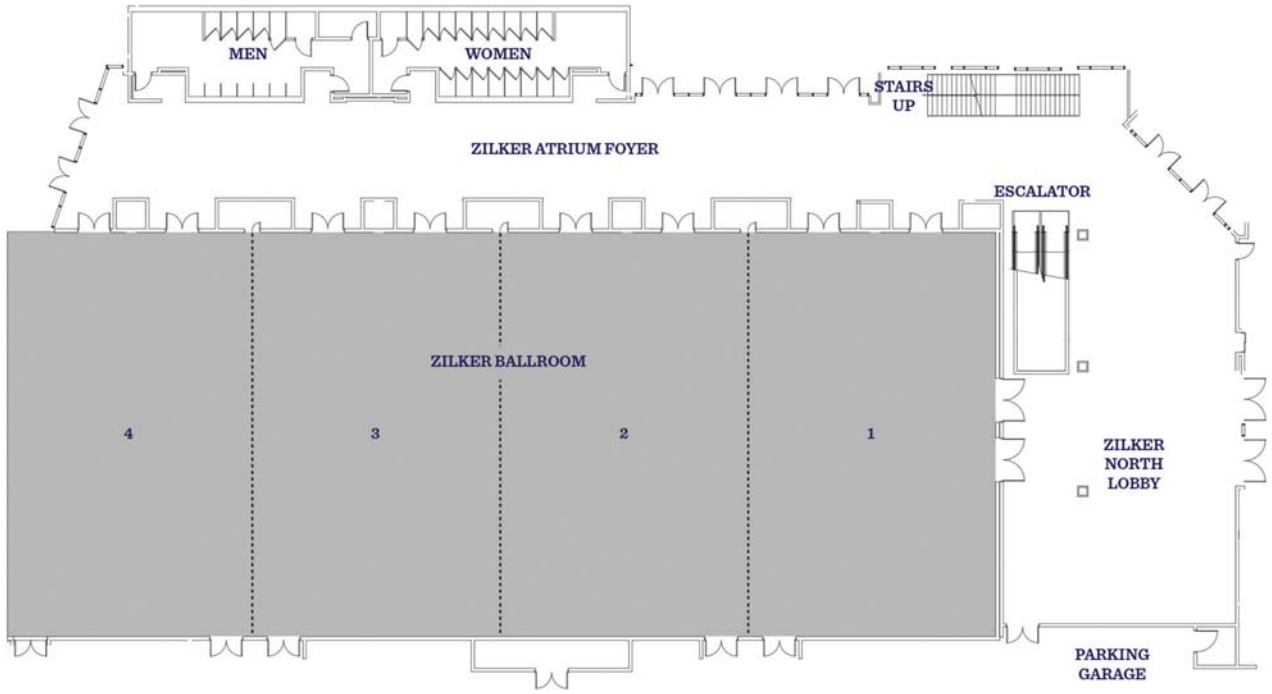
CrowdMR: Integrating Crowdsourcing with MapReduce for AI-Hard Problems
Jun Chen, Chaokun Wang, Yiyuan Bai

8:15 - 10:00

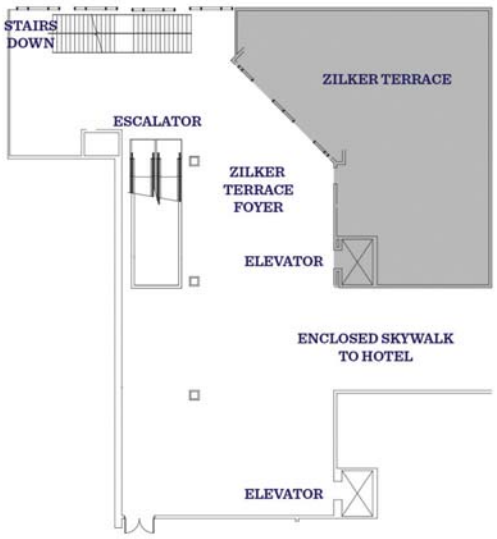
FOOTHILLS II, 17TH FLOOR

AAAI-15 Games Night

Hyatt Regency Austin Zilker Ballroom First and Second Floors



Zilker Ballroom—Second Floor



Thursday, January 29 — 9:00 AM – 11:50 AM

9:00 - 9:50

ZILKER BALLROOM

AAAI-15 Invited Talk

Intelligent Decisions
Meinolf Sellmann (IBM Thomas J. Watson Research Center)

Introduction by Holger H. Hoos

9:50 - 10:10

Coffee Break

10:10 - 11:50

TEXAS I

Natural Language Processing 3

Talks

Dataless Text Classification with Descriptive LDA
Xingyuan Chen, Yunqing Xia, Peng Jin, John Carroll

Ordering-Sensitive and Semantic-Aware Topic Modeling
Min Yang, Tianyi Cui, Wenting Tu

A Neural Probabilistic Model for Context Based Citation Recommendation
Wenyi Huang, Zhaohui Wu, Chen Liang, Prasenjit Mitra, C. Lee Giles

Learning to Recommend Quotes for Writing
Jiwei Tan, Xiaojun Wan, Jianguo Xiao

Topical Word Embeddings
Yang Liu, Zhiyuan Liu, Tat-Seng Chua, Maosong Sun

Poster Ads

Recurrent Convolutional Neural Networks for Text Classification
Siwei Lai, Liheng Xu, Kang Liu, Jun Zhao

A Novel Neural Topic Model and Its Supervised Extension
Ziqiang Cao, Sujian Li, Yang Liu, Wenjie Li, Heng Ji

Surveyor: A System for Generating Coherent Survey Articles for Scientific Topics
Rahul Jha, Reed Coke, Dragomir Radev

Topic Segmentation with an Ordering-Based Topic Model
Lan Du, John K. Pate, Mark Johnson

A Probabilistic Covariate Shift Assumption for Domain Adaptation
Tameem Adel, Alexander Wong

Towards Knowledge-Driven Annotation
Yassine Mrabet, Claire Gardent, Muriel Foulonneau, Elena Simperl, Eric Ras

Gazetteer-Independent Toponym Resolution Using Geographic Word Profiles
Grant DeLozier, Jason Baldridge, Loretta London

TEXAS II–III

Game Theory and Economic Paradigms 3

Talks

Do Capacity Constraints Constrain Coalitions?
Michal Feldman, Ofir Geri

Cooperative Game Solution Concepts that Maximize Stability under Noise
Yuqian Li, Vincent Conitzer

Solving Games with Functional Regret Estimation
Kevin Waugh, Dustin Morrill, J. Andrew Bagnell, Michael Bowling

Hedonic Coalition Formation in Networks
Martin Hoefer, Daniel Vaz, Lisa Wagner

Fair Information Sharing for Treasure Hunting
Yiling Chen, Kobbi Nissim, Bo Waggoner

Exploring Information Asymmetry in Two-Stage Security Games
Haifeng Xu, Zinovi Rabinovich, Shaddin Dughmi, Milind Tambe

Poster Ads

Balanced Trade Reduction for Dual-Role Exchange Markets
Dengji Zhao, Sarvapali D. Ramchurn, Enrico H. Gerding, Nichols R. Jennings

Elicitation for Aggregation
Rafael M. Frongillo, Yiling Chen, Ian A. Kash

Controlled School Choice with Soft Bounds and Overlapping Types
Ryoji Kurata, Masahiro Goto, Atsushi Iwasaki, Makoto Yokoo

Audit Games with Multiple Defender Resources
Jeremiah Blocki, Nicolas Christin, Anupam Datta, Ariel Procaccia, Arunesh Sinha

TEXAS V–VI

Planning and Scheduling 3

Talks

AAAI-15 Outstanding Paper Award: From Non-Negative to General Operator Cost Partitioning
Florian Pommerening, Malte Helmert, Gabriele Röger, Jendrik Seipp

Easily Accessible Paper: Automatic Configuration of Sequential Planning Portfolios
Jendrik Seipp, Silvan Sievers, Malte Helmert, Frank Hutter

A Generalization of Sleep Sets Based on Operator Sequence Redundancy
Robert C. Holte, Yusra Alkhazraji, Martin Wehrle

Heuristics and Symmetries in Classical Planning
Alexander Shleyfman, Michael Katz, Malte Helmert, Silvan Sievers, Martin Wehrle

Tractability of Planning with Loops
Siddharth Srivastava, Shlomo Zilberstein, Abhishek Gupta, Pieter Abbeel, Stuart Russell

Goal Recognition Design for Non-Optimal Agents
Sarah Keren, Avigdor Gal, Erez Karpas

Poster Ads

Tractable Cost-Optimal Planning over Restricted Polytree Causal Graphs
Meysam Aghighi, Peter Jonsson, Simon Ståhlberg

Factored Symmetries for Merge-and-Shrink Abstractions
Silvan Sievers, Martin Wehrle, Malte Helmert, Alexander Shleyfman, Michael Katz

Some Fixed Parameter Tractability Results for Planning with Non-Acyclic Domain-Transition Graphs
Christer Bäckström

Measuring Plan Diversity: Pathologies in Existing Approaches and a New Plan Distance Metric
Robert P. Goldman, Ugur Kuter

Variable-Deletion Backdoors to Planning
Martin Kronegger, Sebastian Ordyniak, Andreas Pfandler

HILL COUNTRY AB

Vision 1

Talks

Integrating Image Clustering and Codebook Learning
Pengtao Xie, Eric Xing

A Bayesian Approach to Perceptual 3D Object-Part Decomposition Using Skeleton-Based Representations
Tarek El-Gaaly, Vicky Froyen, Ahmed Elgammal, Jacob Feldman, Manish Singh

Colorization by Patch-Based Local Low-Rank Matrix Completion
Quanming Yao, James T. Kwok

Spectral Clustering Using Multilinear SVD: Analysis, Approximations and Applications
Debarghya Ghoshdastidar, Ambedkar Dukkipati

Learning to Describe Video with Weak Supervision by Exploiting Negative Sentential Information
Haonan Yu, Jeffrey Mark Siskind

AAAI-15 Outstanding Student Paper Award: Surpassing Human-Level Face Verification Performance on LFW with GaussianFace
Chaochao Lu, Xiaoou Tang

Poster Ads

Multi-View Point Registration via Alternating Optimization
Junchi Yan, Jun Wang, Hongyuan Zha, Xiaokang Yang, Stephen M. Chu

Sparse Deep Stacking Network for Image Classification
Jun Li, Heyou Chang, Jian Yang

Dictionary Learning with Mutually Reinforcing Group-Graph Structures
Hongteng Xu, Licheng Yu, Dixin Luo, Hongyuan Zha, Yi Xu

Person Identification Using Anthropometric and Gait Data from Kinect Sensor
Virginia O. Andersson, Ricardo M. Araujo

Approximate MaxEnt Inverse Optimal Control and its Application for Mental Simulation of Human Interactions
De-An Huang, Amir-massoud Farahmand, Kris M. Kitani, J. Andrew Bagnell

BIG BEND

Cognitive Systems 2

Talks

Inference Graphs: Combining Natural Deduction and Subsumption Inference in a Concurrent Reasoner
Daniel R. Schlegel, Stuart C. Shapiro

Providing Arguments in Discussions Based on the Prediction of Human Argumentative Behavior
Ariel Rosenfeld, Sarit Kraus

Scalable and Interpretable Data Representation for High-Dimensional, Complex Data
Been Kim, Kayur Patel, Afshin Rostamizadeh, Julie Shah

Easily Accessible Paper: When Suboptimal Rules
Avshalom Elmalech, David Sarne, Avi Rosenfeld, Eden Shalom Erez

Heuristic Induction of Rate-Based Process Models
Pat Langley, Adam Arvay

Poster Ads

Using Supervised Learning to Uncover Deep Musical Structure
Phillip B. Kirlin, David D. Jensen

AffectiveSpace 2: Enabling Affective Intuition for Concept-Level Sentiment Analysis
Erik Cambria, Jie Fu, Federica Bisio, Soujanya Poria

Moral Decision-Making by Analogy: Generalizations versus Exemplars
Joseph A. Blass, Kenneth D. Forbus

Collaboration in Social Problem-Solving: When Diversity Trumps Network Efficiency
Diego V. Noble, Marcelo O. R. Prates, Daniel S. Bossle, Luís C. Lamb

An Association Network for Computing Semantic Relatedness
Keyang Zhang, Kenny Q. Zhu, Seung-won Hwang

A Stackelberg Game Approach for Incentivizing Participation in Online Educational Forums with Heterogeneous Student Population
Rohith D Vallam, Priyanka Bhatt, Debmalya Mandal, Y. Narahari

Dialogue Understanding in a Logic of Action and Belief
Alfredo Gabaldon, Pat Langley

TEXAS VII

What's Hot Talks 4

What's Hot in the Angry Birds Artificial Intelligence Competition
Jochen Renz

What's Hot in the Automated Negotiating Agents Competition
Koen Hindriks

What's Hot in the SAT and ASP Competitions
Marijn Heule, Torsten Schaub

What's Hot in Knowledge Representation and Reasoning (KR)
Chitta Baral

What's Hot in Knowledge Discovery and Data Mining (KDD)
Wei Wang

What's Hot in Crowdsourcing and Human Computation (HCOMP)
Jeffrey Bigham

HILL COUNTRY CD

IAAI-15: Fraud Detection and Planning

Deployed: Robust System for Identifying Procurement Fraud
Amit Dhurandhar, Rajesh Ravi, Bruce Graves, Gopikrishnan Maniachari, Markus Ettl

Emerging: Design and Experiment of a Collaborative Planning Service for NetCentric International Brigade Command
Christophe Guettier, Willy Lamal, Israël Mayk, Jacques Yelloz

Deployed: Activity Planning for a Lunar Orbital Mission
John L. Bresina

Thursday, January 29 — 11:50 AM – 1:50 PM

11:50 - 1:20

Lunch Break / Student Abstract Talks / AAAI Lunch with a Fellow Program

TEXAS I

Student Abstract Talks

Poster Ads

Accelerating SAT Solving by Common Subclause Elimination
Yaowei Yan, Chris E. Gutierrez, Jeriah Jn-Charles, Forrest Sheng Bao, Yuanlin Zhang

Dealing with Trouble: A Data-Driven Model of a Repair Type for a Conversational Agent
Sviatlana Höhn

Combining Ontology Class Expression Generation with Mathematical Modeling for Ontology Learning
Jedrzej Potoniec, Agnieszka Lawrynowicz

Effect of Spatial Pooler Initialization on Column Activity in Hierarchical Temporal Memory
Mackenzie Leake, Liyu Xia, Kamil Rocki, Wayne Imaino

Active Advice Seeking for Inverse Reinforcement Learning
Phillip Odom, Sriraam Natarajan

A Sequence Labeling Approach to Deriving Word Variants
Jennifer D'Souza

Learning Word Vectors Efficiently Using Shared Representations and Document Representations
Qun Luo, Weiran Xu

What Is the Longest River in the USA? Semantic Parsing for Aggregation Questions
Kun Xu, Sheng Zhang, Yansong Feng, Songfang Huang, Dongyan Zhao

A Multi-Pass Sieve for Name Normalization
Jennifer D'Souza

Improving Microblog Retrieval from Exterior Corpus by Automatically Constructing a Microblogging Corpus
Wenting Tu, David Cheung, Nikos Mamoulis

Spatio-Temporal Signatures of User-Centric Data: How Similar Are We?
Samta Shukla, Aditya Telang, Salil Joshi, L. Venkat Subramaniam

Coupled Collaborative Filtering for Context-Aware Recommendation
Xinxin Jiang, Wei Liu, Longbing Cao, Guodong Long

Predicting the Quality of User Experiences to Improve Productivity and Wellness
Priya Lekha Donti, Jacob Rosenbloom, Alex Gruver, James C. Boerkoel Jr.

Designing Vaccines that Are Robust to Virus Escape
Swetasudha Panda, Yevgeniy Vorobeychik

A Succinct Conceptualization of the Foundations for a Network Organization Paradigm
Saad Alqithami

Actionable Combined High Utility Itemset Mining
Jingyu Shao, Junfu Yin, Wei Liu, Longbing Cao

Stochastic Blockmodeling for Online Advertising
Li Chen, Matthew Patton

Improving Cross-Domain Recommendation through Probabilistic Cluster-Level Latent Factor Model
Siting Ren, Sheng Gao, Jianxin Liao, Jun Guo

Characterizing Performance of Consistency Algorithms by Algorithm Configuration of Random CSP Generators
Daniel J. Geschwender, Robert J. Woodward, Berthe Y. Choueiry

On Manipulablity of Random Serial Dictatorship in Sequential Matching with Dynamic Preferences
Hadi Hosseini, Kate Larson, Robin Cohen

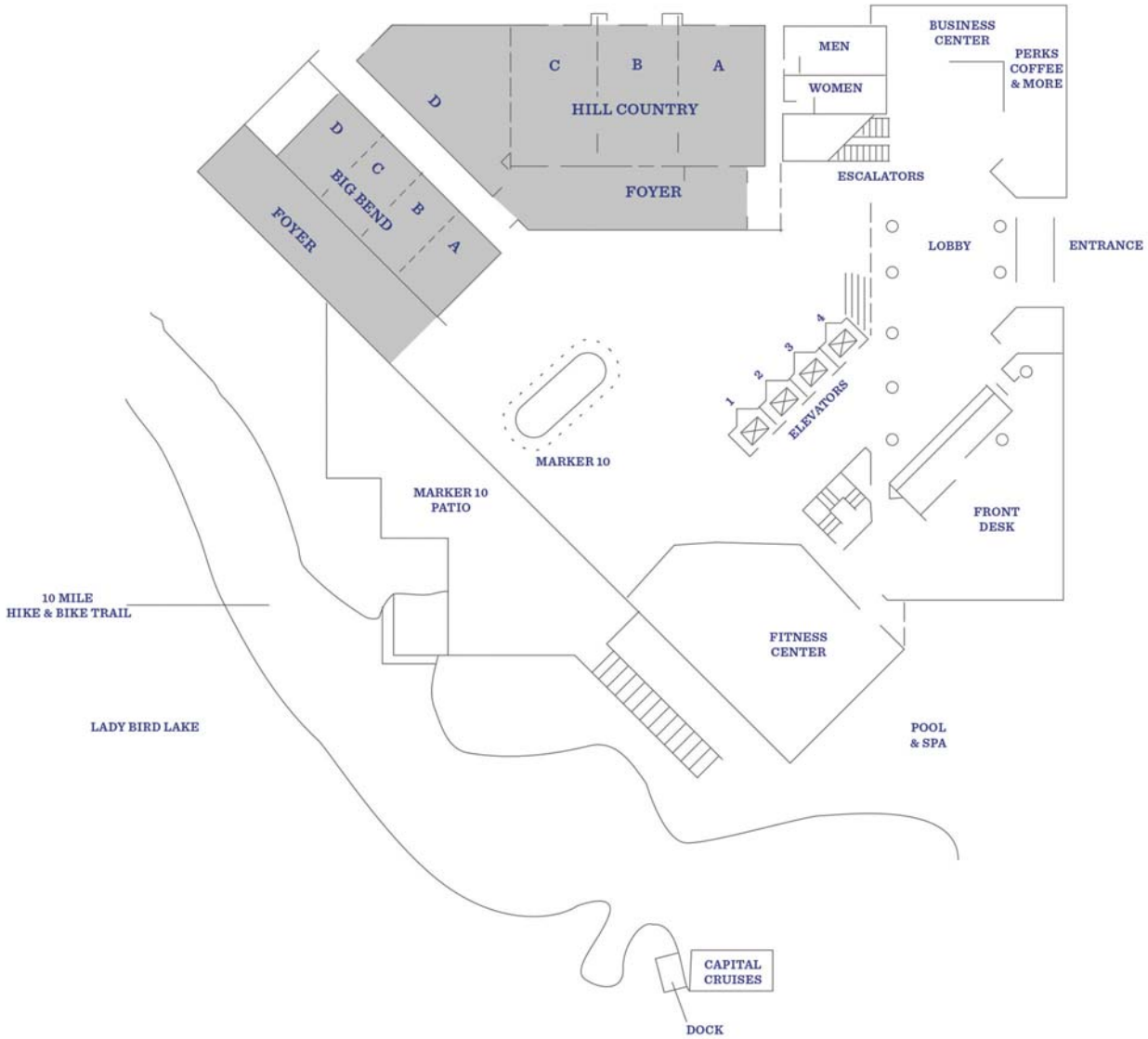
Placing Influencing Agents in a Flock
Katie Genter, Peter Stone

1:20 - 1:50

ZILKER BALLROOM

Video Competition Awards

Hyatt Regency Austin First Floor



Thursday, January 29 — 1:55 PM – 3:30 PM

1:55 - 3:10

TEXAS I

Machine Learning 8

Talks

Marginalized Denoising for Link Prediction and Multi-Label Learning
Zheng Chen, Minmin Chen, Kilian Q. Weinberger, Weixiong Zhang

Large-Margin Multi-Label Causal Feature Learning
Chang Xu, Dacheng Tao, Chao Xu

Doubly Robust Covariate Shift Correction
Sashank Jakkam Reddi, Barnabás Póczos, Alex Smola

Poster Ads

TODTLER: Two-Order-Deep Transfer Learning
Jan Van Haaren, Andrey Kolobov, Jesse Davis

Absent Multiple Kernel Learning
Xinwang Liu, Lei Wang, Jianping Yin, Yong Dou, Jian Zhang

Learning Sparse Representations from Datasets with Uncertain Group Structures: Model, Algorithm and Applications
Longwen Gao, Shuigeng Zhou

Large Margin Metric Learning for Multi-Label Prediction
Weiwei Liu, Ivor W. Tsang

Variational Inference for Nonparametric Bayesian Quantile Regression
Sachinthaka Abeywardana, Fabio Ramos

Multi-Task Learning and Algorithmic Stability
Yu Zhang

Random Gradient Descent Tree: A Combinatorial Approach for SVM with Outliers
Hu Ding, Jinhui Xu

A Reduction of the Elastic Net to Support Vector Machines with an Application to GPU Computing
Quan Zhou, Wenlin Chen, Shiji Song, Jacob R. Gardner, Kilian Q. Weinberger, Yixin Chen

Nyström Approximation for Sparse Kernel Methods: Theoretical Analysis and Empirical Evaluation
Zenglin Xu, Rong Jin, Bin Shen, Shenghuo Zhu

Gaussian Cardinality Restricted Boltzmann Machines
Cheng Wan, Xiaoming Jin, Guiguang Ding, Dou Shen

Unsupervised Feature Learning through Divergent Discriminative Feature Accumulation
Paul A. Szerlip, Gregory Morse, Justin K. Pugh, Kenneth O. Stanley

Adaptive Sampling with Optimal Cost for Class-Imbalance Learning
Yuxin Peng

Non-Linear Regression for Bag-of-Words Data via Gaussian Process Latent Variable Set Model
Yuya Yoshikawa, Tomoharu Iwata, Hiroshi Sawada

Initializing Bayesian Hyperparameter Optimization via Meta-Learning
Matthias Feurer, Jost Tobias Springenberg, Frank Hutter

Parallel Gaussian Process Regression for Big Data: Low-Rank Representation Meets Markov Approximation
Kian Hsiang Low, Jiangbo Yu, Jie Chen, Patrick Jaillet

TEXAS II–III

AI and the Web 5

Talks

Sub-Merge: Diving Down to the Attribute-Value Level in Statistical Schema Matching
Zhe Lim, Benjamin I. P. Rubinstein

OMNI-Prop: Seamless Node Classification on Arbitrary Label Correlation
Yuto Yamaguchi, Christos Faloutsos, Hiroyuki Kitagawa

Retweet Behavior Prediction Using Hierarchical Dirichlet Process
Qi Zhang, Yeyun Gong, Ya Guo, Xuanjing Huang

RAIN: Social Role-Aware Information Diffusion
Yang Yang, Jie Tang, Cane Wing-ki Leung, Yizhou Sun, Qicong Chen, Juanzi Li, Qiang Yang

Poster Ads

Using Matched Samples to Estimate the Effects of Exercise on Mental Health from Twitter
Virgile Landeiro Dos Reis, Aron Culotta

VELDA: Relating an Image Tweet's Text and Images
Tao Chen, Hany M. SalahEldeen, Xiangnan He, Min-Yen Kan, Dongyuan Lu

Inferring Same-as Facts from Linked Data: An Iterative Import-by-Query Approach
Mustafa Al-Bakri, Manuel Atencia, Steffen Lalande, Marie-Christine Rousset

Prajna: Towards Recognizing Whatever You Want from Images without Image Labeling
Xian-Sheng Hua, Jin Li

Exploring Social Context for Topic Identification in Short and Noisy Texts
Xin Wang, Ying Wang, Wanli Zuo, Guoyong Cai

Visually Interpreting Names as Demographic Attributes by Exploiting Click-Through Data
Yan-Ying Chen, Yin-Hsi Kuo, Chun-Che Wu, Winston H. Hsu

Incorporating Implicit Link Preference into Overlapping Community Detection
Hongyi Zhang, Irwin King, Michael R. Lyu

TEXAS V–VI

AI and the Web 7

Talks

A Tri-Role Topic Model for Domain-Specific Question Answering
Zongyang Ma, Aixin Sun, Quan Yuan, Gao Cong

Efficient Top-k Shortest-Path Distance Queries on Large Networks by Pruned Landmark Labeling
Takuya Akiba, Takanori Hayashi, Nozomi Nori, Yoichi Iwata, Yuichi Yoshida

A Probabilistic Model for Bursty Topic Discovery in Microblogs
Xiaohui Yan, Jiafeng Guo, Yanyan Lan, Jun Xu, Xueqi Cheng

A Stochastic Model for Detecting Heterogeneous Link Communities in Complex Networks
Dongxiao He, Dayou Liu, Di Jin, Weixiong Zhang

A Hybrid Approach of Classifier and Clustering for Solving the Missing Node Problem
Sigal Sina, Avi Rosenfeld, Sarit Kraus, Navot Akiva

HILL COUNTRY AB

Vision 2

Talks

Easily Accessible Paper: Deep Representation Learning with Target Coding
Shuo Yang, Ping Luo, Chen Change Loy, Kenneth W. Shum, Xiaoou Tang

Learning Face Hallucination in the Wild
Erjin Zhou, Haoqiang Fan, Zhimin Cao, Yuning Jiang, Qi Yin

Building Effective Representations for Sketch Recognition
Jun Guo, Changhu Wang, Hongyang Chao

Poster Ads

A Local Sparse Model for Matching Problem
Bo Jiang, Jin Tang, Chris Ding, Bin Luo

Learning Predictable and Discriminative Attributes for Visual Recognition
Yuchen Guo, Guiguang Ding, Xiaoming Jin, Jianmin Wang

Complex Event Detection via Event Oriented Dictionary Learning
Yan Yan, Yi Yang, Haoquan Shen, Deyu Meng, Gaowen Liu, Alexander Hauptmann, Nicu Sebe

Cross-Modal Image Clustering via Canonical Correlation Analysis
Cheng Jin, Wenhui Mao, Ruiqi Zhang, Yuejie Zhang, Xiangyang Xue

Jointly Modeling Deep Video and Compositional Text to Bridge Vision and Language in a Unified Framework
Ran Xu, Caiming Xiong, Wei Chen, Jason J. Corso

On Vectorization of Deep Convolutional Neural Networks for Vision Tasks
Jimmy SJ. Ren, Li Xu

Multi-Tensor Completion with Common Structures
Chao Li, Qibin Zhao, Junhua Li, Andrzej Cichocki, Lili Guo

Temporally Adaptive Restricted Boltzmann Machine for Background Modeling
Linli Xu, Yitan Li, Yubo Wang, Enhong Chen

Compute Less to Get More: Using ORC to Improve Sparse Filtering
Johannes Lederer, Sergio Guadarrama

Swiss-System Based Cascade Ranking for Gait-Based Person Re-identification
Lan Wei, Yonghong Tian, Yaowei Wang, Tiejun Huang

Online Detection of Abnormal Events Using Incremental Coding Length
Jayanta K. Dutta, Bonny Banerjee

Exploring Semantic Inter-Class Relationships (SIR) for Zero-Shot Action Recognition
Chuang Gan, Ming Lin, Yi Yang, Yueting Zhuang, Alexander G. Hauptmann

BIG BEND

Game Theory and Economic Paradigms 4

Talks

A Mechanism Design Approach to Measure Awareness
Diodato Ferraioli, Carmine Ventre, Gabor Aranyi

Easily Accessible Paper: Strategy-Proof and Efficient Kidney Exchange Using a Credit Mechanism
Chen Hajaj, John P. Dickerson, Avinatan Hassidim, Tuomas Sandholm, David Sarne

Assessing the Robustness of Cremer-McLean with Automated Mechanism Design
Michael Albert, Vincent Conitzer, Giuseppe Lopomo

A Unifying Hierarchy of Valuations with Complements and Substitutes
Uriel Feige, Michal Feldman, Nicole Immorlica, Rani Izsak, Brendan Lucier, Vasilis Syrgkanis

A Faster Core Constraint Generation Algorithm for Combinatorial Auctions
Benedikt Bünz, Sven Seuken, Benjamin Lubin

TEXAS VII

Robotics: Science and Systems 2014 (RSS) Presentations 2

Asking for Help Using Inverse Semantics
Stefanie Tellex, Ross Knepper, Adrian Li, Daniela Rus, Nicholas Roy

Learning Articulated Motions from Visual Demonstration
Sudeep Pillai, Matthew Walter, Seth Teller

Tell Me Dave: Context-Sensitive Grounding of Natural Language to Manipulation Instructions
Dipendra Kumar Misra, Jaeyong Sung, Kevin Lee, Ashutosh Saxena

Learning to Locate from Demonstrated Searches
Paul Vernaza, Anthony Stentz

Fully Decentralized Task Swaps with Optimized Local Searching
Lantao Liu, Nathan Michael, Dylan Shell

HILL COUNTRY CD

Natural Language Processing 4

Talks

Local Context Sparse Coding
Seungyeon Kim, Joonseok Lee, Guy Lebanon, Haesun Park

English Light Verb Construction Identification Using Lexical Knowledge
Wei-Te Chen, Claire Bonial, Martha Palmer

Easily Accessible Paper: Learning Greedy Policies for the Easy-First Framework
Jun Xie, Chao Ma, Janardhan Rao Doppa, Prashanth Mannem, Xiaoli Fern, Thomas G. Dietterich, Prasad Tadepalli

Weakly-Supervised Grammar-Informed Bayesian CCG Parser Learning
Dan Garrette, Chris Dyer, Jason Baldridge, Noah A. Smith

Poster Ads

Word Segmentation for Chinese Novels
Likun Qiu, Yue Zhang

A Stratified Strategy for Efficient Kernel-Based Learning
Simone Filice, Danilo Croce, Roberto Basili

Joint Anaphoricity Detection and Coreference Resolution with Constrained Latent Structures
Emmanuel Lassalle, Pascal Denis

Fast and Accurate Prediction of Sentence Specificity
Junyi Jessy Li, Ani Nenkova

Mining User Consumption Intention from Social Media Using Domain Adaptive Convolutional Neural Network
Xiao Ding, Ting Liu, Junwen Duan, Jian-Yun Nie

ZILKER 4

IAAI 30th Anniversary Paper

Process Diagnosis System (PDS) – A 30 Year History
Edward D. Thompson, Ethan Frolich, James C. Bellows, Benjamin E. Bassford, Edward J. Skiko, Mark S. Fox

3:10 - 3:30

Coffee Break

Thursday, January 29 — 3:30 PM – 5:45 PM

3:30 - 4:45

TEXAS I

Machine Learning 9

Talks

Bayesian Maximum Margin Principal Component Analysis
Changying Du, Shandian Zhe, Fuzhen Zhuang, Yuan Qi, Qing He, Zhongzhi Shi

SP-SVM: Large Margin Classifier for Data on Multiple Manifolds
Bin Shen, Bao-Di Liu, Qifan Wang, Yi Fang, Jan P. Allebach

Self-Paced Curriculum Learning
Lu Jiang, Deyu Meng, Qian Zhao, Shiguang Shan, Alexander G. Hauptmann

Poster Ads

Noise-Robust Semi-Supervised Learning by Large-Scale Sparse Coding
Zhiwu Lu, Xin Gao, Liwei Wang, Ji-Rong Wen, Songfang Huang

AAAI-15 Outstanding Student Paper Honorable Mention: Sparse Bayesian Multiview Learning for Simultaneous Association Discovery and Diagnosis of Alzheimer's Disease
Shandian Zhe, Zenglin Xu, Yuan Qi, Peng Yu

Stable Feature Selection from Brain sMRI
Bo Xin, Lingjing Hu, Yizhou Wang, Wen Gao

Clustering-Based Collaborative Filtering for Link Prediction
Xiangyu Wang, Dayu He, Danyang Chen, Jinhui Xu

Eigenvalues Ratio for Kernel Selection of Kernel Methods
Yong Liu, Shizhong Liao

Kickback Cuts Backprop's Red-Tape: Biologically Plausible Credit Assignment in Neural Networks
David Balduzzi, Hastagiri Vanchinathan, Joachim Buhmann

Pareto Ensemble Pruning
Chao Qian, Yang Yu, Zhi-Hua Zhou

Cross-Modal Similarity Learning via Pairs, Preferences, and Active Supervision
Yi Zhen, Piyush Rai, Hongyuan Zha, Lawrence Carin

Optimizing Bag Features for Multiple-Instance Retrieval
Zhouyu Fu, Feifei Pan, Cheng Deng, Wei Liu

Generalization Analysis for Game-Theoretic Machine Learning
Haifang Li, Fei Tian, Wei Chen, Tao Qin, Zhi-Ming Ma, Tie-Yan Liu

Never-Ending Learning
Tom Mitchell, William Cohen, Estevam Hruschka, Partha Talukdar, Justin Betteridge, Andrew Carlson, Bhavana Dalvi, Matt Gardner, Bryan Kisiel, Jayant Krishnamurthy, Ni Lao, Kathryn Mazaitis, Tahir Mohamed, Ndapa Nakashole, Emmanouil Antonios Platanios, Alan Ritter, Mehdi Samadi, Burr Settles, Richard Wang, Derry Wijaya, Abhinav Gupta, Xinlei Chen, Abulhair Saparov, Malcolm Greaves, Joel Welling

Localized Centering: Reducing Hubness in Large-Sample Data
Kazuo Hara, Ikumi Suzuki, Masashi Shimbo, Kei Kobayashi, Kenji Fukumizu, Milos Radovanovic

Graph-Sparse LDA: A Topic Model with Structured Sparsity
Finale Doshi-Velez, Byron C. Wallace, Ryan Adams

Pattern-Based Variant-Best-Neighbors Respiratory Motion Prediction Using Orthogonal Polynomials Approximation
Kin Ming Kam, Shouyi Wang, Stephen R. Bowen, Wanpracha Chaovalitwongse

TEXAS II–III

AI and the Web 6

Talks

Estimating Temporal Dynamics of Human Emotions
Seungyeon Kim, Joonseok Lee, Guy Lebanon, Haesun Park

Approximating Model-Based ABox Revision in DL-Lite: Theory and Practice
Guilin Qi, Zhe Wang, Kewen Wang, Xuefeng Fu, Zhiqiang Zhuang

Trust Models for RDF Data: Semantics and Complexity
Valeria Fionda, Gianluigi Greco

Answering Conjunctive Queries over *EL* Knowledge Bases with Transitive and Reflexive Roles
Giorgio Stefanoni, Boris Motik

Poster Ads

Handling owl:sameAs via Rewriting
Boris Motik, Yavor Nenov, Robert Piro, Ian Horrocks

Extracting Bounded-Level Modules from Deductive RDF Triplestores
Marie-Christine Rousset, Federico Ulliana

Mining User Intents in Twitter: A Semi-Supervised Approach to Inferring Intent Categories for Tweets
Jinpeng Wang, Gao Cong, Wayne Xin Zhao, Xiaoming Li

CrowdWON: A Modelling Language for Crowd Processes Based on Workflow Nets
David Sánchez-Charles, Victor Muntés-Mulero, Marc Solé, Jordi Nin

Using Frame Semantics for Knowledge Extraction from Twitter
Anders Søgaard, Barbara Plank, Hector Martinez Alonso

An Unsupervised Framework of Exploring Events on Twitter: Filtering, Extraction and Categorization
Deyu Zhou, Liangyu Chen, Yulan He

Target-Dependent Churn Classification in Microblogs
Hadi Amiri, Hal Daume III

TEXAS V–VI

Integrated Systems Track 1

Talks

Toward Mobile Robots Reasoning Like Humans
Jean Oh, Arne Suppé, Felix Duvallet, Abdeslam Boularias, Luis Navarro-Serment, Martial Hebert, Anthony Stentz, Jerry Vinokurov, Oscar Romero, Christian Lebiere, Robert Dean

Learning to Manipulate Unknown Objects in Clutter by Reinforcement
Abdeslam Boularias, J. Andrew Bagnell, Anthony Stentz

Robot Learning Manipulation Action Plans by "Watching" Unconstrained Videos from the World Wide Web
Yezhou Yang, Yi Li, Cornelia Fermüller, Yiannis Aloimonos

Bayesian Active Learning-Based Robot Tutor for Children's Word-Reading Skills
Goren Gordon, Cynthia Breazeal

Poster Ads

Integration and Evaluation of a Matrix Factorization Sequencer in Large Commercial ITS
Carlotta Schatten, Ruth Janning, Lars Schmidt-Thieme

Going Beyond Literal Command-Based Instructions: Extending Robotic Natural Language Interaction Capabilities
Tom Williams, Gordon Briggs, Bradley Oosterveld, Matthias Scheutz

RANSAC versus CS-RANSAC
Geun-Sik Jo, Kee-Sung Lee, Devy Chandra, Chol-Hee Jang, Myung-Hyun Ga

CORPP: Commonsense Reasoning and Probabilistic Planning, as Applied to Dialog with a Mobile Robot
Shiqi Zhang, Peter Stone

Tackling Mental Health by Integrating Unobtrusive Multimodal Sensing
Dawei Zhou, Jiebo Luo, Vincent Silenzio, Yun Zhou, Jile Hu, Glenn Currier, Henry Kautz

HILL COUNTRY AB

Search and Constraint Satisfaction 1

Talks

The Extendable-Triple Property: A New CSP Tractable Class beyond BTP
Philippe Jégou, Cyril Terrioux

SAT Modulo Monotonic Theories
Sam Bayless, Noah Bayless, Holger H. Hoos, Alan J. Hu

SAT-Based Strategy Extraction in Reachability Games
Niklas Een, Alexander Legg, Nina Narodytska, Leonid Ryzhyk

On Computing Maximal Subsets of Clauses that Must Be Satisfiable with Possibly Mutually-Contradictory Assumptive Contexts
Philippe Besnard, Éric Grégoire, Jean-Marie Lagniez

Poster Ads

Efficient Extraction of QBF (Counter)models from Long-Distance Resolution Proofs
Valeriy Balabanov, Jie-Hong R. Jiang, Mikolás Janota, Magdalena Widl

Exploiting Determinism to Scale Relational Inference
Mohamed-Hamza Ibrahim, Christopher Pal, Gilles Pesant

Just Count the Satisfied Groundings: Scalable Local-Search and Sampling Based Inference in MLNs
Deepak Venugopal, Somdeb Sarkhel, Vibhav Gogate

BIG BEND

Game Theory & Economic Paradigms 5

Talks

Analysis of Equilibria in Iterative Voting Schemes
Zinovi Rabinovich, Svetlana Obraztsova, Omer Lev, Evangelos Markakis, Jeffrey S. Rosenschein

Strategic Voting and Strategic Candidacy
Markus Brill, Vincent Conitzer

Optimal Personalized Filtering against Spear-Phishing Attacks
Aron Laszka, Yevgeniy Vorobeychik, Xenofon Koutsoukos

Stable Invitations
Hooyeon Lee, Yoav Shoham

Poster Ads

Price Evolution in a Continuous Double Auction Prediction Market with a Scoring-Rule Based Market Maker
Mithun Chakraborty, Sanmay Das, Justin Peabody

The Pricing War Continues: On Competitive Multi-Item Pricing
Omer Lev, Joel Oren, Craig Boutilier, Jeffrey S. Rosenschein

The Complexity of Recognizing Incomplete Single-Crossing Elections
Edith Elkind, Piotr Faliszewski, Martin Lackner, Svetlana Obraztsova

Mechanism Design for Team Formation
Mason Wright, Yevgeniy Vorobeychik

Truthful Mechanisms without Money for Non-Utilitarian Heterogeneous Facility Location
Paolo Serafino, Carmine Ventre

Incentive Networks
Yuezhou Lv, Thomas Moscibroda

TEXAS VII

Robotics Student Fellowship Talks 2

Socially Assistive Robotics for Long-Term Health Behavior Change
Jillian Greczek

The Development of Socially Assistive Robots for Healthcare Applications to Improve Quality of Life
Wing-Yue Geoffrey Louie

Intent Prediction in Human-Robot Interaction
Matthew O. Derry

Learning and Grounding Haptic Affordances Using Demonstration and Human-Guided Exploration
Vivian Chu

Apprenticeship Scheduling for Human-Robot Teams in Manufacturing
Matthew Craig Gombolay

Following a Target Whose Behavior Is Predictable
Florian Shkurti

Multi-Agent Rendezvous
Malika Meghjani

HILL COUNTRY CD

Game Playing and Interactive Entertainment 1

Talks

Continuity Editing for 3D Animation
Quentin Galvane, Rémi Ronfard, Christophe Lino, Marc Christie

Lifting Model Sampling for General Game Playing to Incomplete-Information Models
Michael Schofield, Michael Thielscher

Automatic Generation of Alternative Starting Positions for Simple Traditional Board Games
Umair Z. Ahmed, Krishnendu Chatterjee, Sumit Gulwani

Pruning Game Tree by Rollouts
Bojun Huang

A Logic for Reasoning about Game Strategies
Dongmo Zhang, Michael Thielscher

4:45 - 5:45

Long Break

Thursday, January 29 — 5:45 PM – 8:15 PM

5:45 - 6:45

TEXAS BALLROOM

AAAI-15 Debate on Autonomous Weapons
Participants: Ron Arkin (Georgia Institute of Technology) and Stephen Goose (Executive Director, Arms Division, Human Rights Watch)

Moderator: Thomas G. Dietterich, AAAI President (Oregon State University)

6:45 - 8:15

ZILKER BALLROOM

AAAI-15 Poster /Demo Reception 3

The Poster / Demo Reception will include technical poster presentations of all papers presented today as Poster Ads, as well as the demos listed below. Student Abstract posters of talks presented during today's lunch break will also be presented, and robotics exhibitions and game exhibits will be available.

ZILKER BALLROOM

AAAI-15 Technical Demos

Gene Selection in Microarray Datasets Using Progressively Refined PSO Scheme
Yamuna Prasad, K. K. Biswas

Multi-Agent Dynamic Coupling for Cooperative Vehicles Modeling
Maxime Guériau, Romain Billot, Nour-Eddin El Faouzi, Salima Hassas, Frédéric Armetta

Visualizing Inference
Henry Lieberman, Joseph Henke

Salient Object Detection via Objectness Proposals
Tam V. Nguyen

Visualization Techniques for Topic Model Checking
Jaimie Murdock, Colin Allen, Yuichi Yoshida

Friday, January 30 — 9:00 AM – 12:30 PM

9:00 - 9:50

ZILKER BALLROOM 1-2

AAAI-15 Invited Talk

Using Statistics and Semantics to Solve Big (Graph) Data Problems
Lise Getoor (University of California, Santa Cruz)
Introduction by Luc De Raedt

ZILKER BALLROOM 3-4

AAAI-15 Invited Talk

von Neumann's Dream
Michael Bowling (University of Alberta)
Introduction by Tuomas Sandholm

9:50 - 10:00

ZILKER BALLROOM 1-2

AAAI-15 Award Ceremony

10:00 - 10:20

Coffee Break

10:20 - 11:20

ZILKER BALLROOM 1

Robotics 1

Talks

Intent Prediction and Trajectory Forecasting via Predictive Inverse Linear-Quadratic Regulation
Mathew Monfort, Anqi Liu, Brian D. Ziebart

Model-Based Reinforcement Learning in Continuous Environments Using Real-Time Constrained Optimization
Olov Andersson, Fredrik Heintz, Patrick Doherty

Approximately Optimal Risk-Averse Routing Policies via Adaptive Discretization
Darrell Hoy, Evdokia Nikolova

Easily Accessible Paper: Reusing Previously Found A* Paths for Fast Goal-Directed Navigation in Dynamic Terrain
Carlos Hernández, Roberto Asín, Jorge A. Baier

ZILKER BALLROOM 2

Heuristic Search and Optimization 2

Talks

BDD-Constrained Search: A Unified Approach to Constrained Shortest Path Problems
Masaaki Nishino, Norihito Yasuda, Shin-ichi Minato, Masaaki Nagata

Complexity Results for Compressing Optimal Paths
Adi Botea, Ben Strasser, Daniel Harabor

On Interruptible Pure Exploration in Multi-Armed Bandits
Alexander Shleyfman, Antonín Komenda, Carmel Domshlak

Proximal Operators for Multi-Agent Path Planning
José Bento, Nate Derbinsky, Charles Mathy, Jonathan S. Yedidia

ZILKER BALLROOM 3

Search and Constraint Satisfaction 2

Talks

Solving Distributed Constraint Optimization Problems Using Logic Programming
Tiep Le, Tran Cao Son, Enrico Pontelli, William Yeoh

Distributed Multiplicative Weights Methods for DCOP
Daisuke Hatano, Yuichi Yoshida

Strong Bounds Consistencies and Their Application to Linear Constraints
Christian Bessiere, Anastasia Paparrizou, Kostas Stergiou

Binarisation via Dualisation for Valued Constraints
David A. Cohen, Martin C. Cooper, Peter G. Jeavons, Stanislav Živný

ZILKER BALLROOM 4

Vision 3

Talks

Metric Learning-Driven Multi-Task Structured Output Optimization for Robust Keypoint Tracking
Liming Zhao, Xi Li, Jun Xiao, Fei Wu, Yueting Zhuang

Automatic Topic Discovery for Multi-Object Tracking
Wenhan Luo, Björn Stenger, Xiaowei Zhao, Tae-Kyun Kim

Online Dictionary Learning on Symmetric Positive Definite Manifolds with Vision Applications
Shengping Zhang, Shiva Kasiviswanathan, Pong C. Yuen, Mehrtash Harandi

A Boosted Multi-Task Model for Pedestrian Detection with Occlusion Handling
Chao Zhu, Yuxin Peng

11:20 - 11:30

Break (no refreshments)

11:30 - 12:30

ZILKER BALLROOM 1

Robotics 2

Talks

SCRAM: Scalable Collision-Avoiding Role Assignment with Minimal-Makespan for Formational Positioning
Patrick MacAlpine, Eric Price, Peter Stone

Learning to Mediate Perceptual Differences in Situated Human-Robot Dialogue
Changsong Liu, Joyce Y. Chai

Spatio-Spectral Exploration Combining In Situ and Remote Measurements
David R. Thompson, David Wettergreen, Greydon Foil, Michael Furlong, Anatha Ravi Kiran

An Entorhinal-Hippocampal Model for Simultaneous Cognitive Map Building
Miaolong Yuan, Bo Tian, Vui Ann Shim, Huajin Tang, Haizhou Li

ZILKER BALLROOM 2

Heuristic Search and Optimization 3

Talks

Massively Parallel A* Search on a GPU
Yichao Zhou, Jianyang Zeng

On Unconstrained Quasi-Submodular Function Optimization
Jincheng Mei, Kang Zhao, Bao-Liang Lu

A Theoretical Analysis of the Optimization by Gaussian Continuation
Hossein Mobahi, John W. Fisher III

Incremental Weight Elicitation for Multiobjective State Space Search
Nawal Benabbou, Patrice Perny

ZILKER BALLROOM 3

Planning and Scheduling 4

Talks

Tighter Value Function Bounds for Bayesian Reinforcement Learning
Kanghoon Lee, Kee-Eung Kim

Reward Shaping for Model-Based Bayesian Reinforcement Learning
Hyeoneun Kim, Woosang Lim, Kanghoon Lee, Yung-Kyun Noh, Kee-Eung Kim

Approximate Linear Programming for Constrained Partially Observable Markov Decision Processes
Pascal Poupart, Aarti Malhotra, Pei Pei, Kee-Eung Kim, Bongseok Goh, Michael Bowling

Scalable Planning and Learning for Multiagent POMDPs
Christopher Amato, Frans A. Oliehoek

ZILKER BALLROOM 4

Senior Member Summary Talks 2

Compile!
Pierre Marquis

Semantic Representation
Lenhart Schubert

Achieving Intelligence Using Prototypes, Composition, and Analogy
Vinay K. Chaudhri

AAAI-15 / IAAI-15 Program Addendum
January 25 – 30, 2015

The following information was not available at the time of the program printing.

Virtual Agents Demo Title: **Social Simulation with Virtual Agents (Arnav Jhala)**
Monday, January 26, 9:00 AM – 5:30 PM (Open House)
Tuesday January 27, 7:45 PM – 8:45 PM (Poster / Demo Session 1)
Zilker Ballroom, First Level

NEW! **AAAI/SIGAI Job Market Session**
Tuesday, January 27, 4:45 – 5:45 PM
Foothills I, 17th Floor

As an extension of the AAAI / ACM SIGAI Job Market Electronic Bulletin Board, AAAI job seekers and job advertisers are invited to attend a meet and greet session during the long break just prior to the Shakey Celebration on Tuesday evening. Light refreshments will be available.

What's Hot Talks 3: **Room Correction**
Wednesday, January 28, 9:00 – 9:15 AM

Texas Ballroom I: What's Hot in the Planning Competition (Stefan Edelkamp)
Texas Ballroom II-III: What's Hot in Human Factors in Computing Systems (Wei Li)

IAAI-15 Invited Talk: **Data Science for Social Good: Using Your Powers To Make a Social Impact! Rayid Ghani (University of Chicago)**
Wednesday, January 28, 1:40 – 2:30 PM
Texas Ballroom, 2nd Level

The past few years have seen an increasing demand for machine learning/data mining/data science powers. That's wonderful for us data scientists but wouldn't the world be so much better if we also used our computational and analytical powers for social good? In this talk, I'll give examples from work going on around the world including from the summer fellowship program we started at University of Chicago on Data Science for Social Good to show that there are a lot of important social problems in the world that could use our help — from helping students graduate high school to helping disaster victims to improving health.

NEW! AAAI-15 Competition Panel: **Competitions: Do They Help Advance AI Research?**
Thursday, January 29, 9:00 – 9:50 AM
Texas Ballroom, 2nd Level

Panelists: Michael Bowling (University of Alberta), Koen Hindriks (TU Delft), Claude Sammut (UNSW Australia), and Sven Wachsmuth (Bielefeld University)
Moderator: Michael Thielscher (University of New South Wales)

Panelists will discuss how competitions can help to advance AI research.

Special Meetings Room Changes
The following meetings will be held in Padre Island on the second floor of the Hyatt Regency Austin:

AAAI Press Conference
Tuesday, January 27, 11:00 AM – 12:00 PM

AAAI Publications Committee Meeting
Wednesday, January 28, 7:45 – 8:45 AM