

# AAAI-08 / IAAI-08

## Technical Program Schedule

### Monday, July 14

#### 6:00 – 7:00 pm

AAAI-08 Opening Reception

### Tuesday, July 15

Regency Ballroom, Hyatt Regency

8:30 - 9:00 am

AAAI-08/IAAI-08 Opening Ceremony

*Welcome and Opening Remarks*

*Outstanding Award Presentations – Papers, SPC Member, PC Member*

Dieter Fox and Carla Gomes, AAAI-08 Program Cochairs

*IAAI Welcome, Robert S. Englemore Award, Deployed Application Award Announcements*

Mehmet Goker, IAAI-08 Conference Chair, Karen Haigh, IAAI-08 Program Cochair, and David Leake, AI Magazine Editor-in-Chief

*IJCAI-JAIR Best Paper Prize*

Toby Walsh, Editor-in-Chief of the *Journal of Artificial Intelligence Research (JAIR)*

*AAAI Classic Paper and Distinguished Service Awards*

Alan Mackworth, AAAI Past President and Awards Committee Chair

Eric Horvitz, AAAI President

#### 9:00 – 10:00 am

Regency Ballroom, Hyatt Regency

AAAI Presidential Address

Eric Horvitz (Microsoft Corporation)

#### 10:20 - 11:20 am

#### Global Constraints

1032: Efficient Context-Free Grammar Constraints

*Serdar Kadioglu, Meinolf Sellmann*

135: Bound Consistency for Binary Length-Lex Set Constraints

*Pascal Van Hentenryck, Justin Yip, Carmen Gervet, Grégoire Doms*

170: The Parameterized Complexity of Global Constraints

*C. Bessiere, E. Hebrard, B. Hnich, Z. Kiziltan, C.-G. Quimper, T. Walsh*

## **Nectar/Senior: Agents and Game Theory**

Nectar-37: Efficient Algorithms to Solve Bayesian Stackelberg Games for Security Applications  
*Praveen Paruchuri, Jonathan P. Pearce, Janusz Marecki, Milind Tambe, Fernando Ordonez, Sarit Kraus*

Nectar-61: Adaptive Management of Air Traffic Flow: A Multiagent Coordination Approach  
*Kagan Tumer, Adrian Agogino*

Senior: Game Theory Pragmatics: A Challenge for AI  
*Yoav Shoham*

## **Natural-Language Processing I**

720: Text Categorization with Knowledge Transfer from Heterogeneous Data Sources  
*Rakesh Gupta, Lev Ratinov*

820: Importance of Semantic Representation: Dataless Classification  
*Ming-Wei Chang, Lev Ratinov, Dan Roth, Vivek Srikumar*

440: Single Document Keyphrase Extraction Using Neighborhood Knowledge  
*Xiaojun Wan, Jianguo Xiao*

## **Approximate Probabilistic Inference I**

392: A General Method for Reducing the Complexity of Relational Inference and its Application to MCMC  
*Hoifung Poon, Pedro Domingos, Marc Sumner*

962: Focusing Generalizations of Belief Propagation on Targeted Queries  
*Arthur Choi, Adnan Darwiche*

960: Many-Pairs Mutual Information for Adding Structure to Belief Propagation Approximations  
*Arthur Choi, Adnan Darwiche*

## **Semi-Supervised Learning**

236: Semi-supervised Classification Using Local and Global Regularization  
*Fei Wang, Tao Li, Gang Wang, Changshui Zhang*

78: Instance-level Semisupervised Multiple Instance Learning  
*Yangqing Jia, Changshui Zhang*

238: On Discriminative Semi-Supervised Classification  
*Fei Wang, Changshui Zhang*

## **Integrated Intelligence: Adaptive Systems for Complex Task Management**

II-56: Achieving Far Transfer in an Integrated Cognitive Architecture  
*Dan Shapiro, Tolga Könik, Paul O'Rorke*

II-49: POIROT – Integrated Learning of Web Service Procedures  
*Mark Burstein, Robert Laddaga, David McDonald, Michael Cox, Brett Benyo, Paul Robertson, Talib Hussain, Marshall Brinn, Drew McDermott*

II-43: RADAR: A Personal Assistant that Learns to Reduce Email Overload

*Michael Freed, Jaime Carbonell, Geoff Gordon, Jordan Hayes, Brad Myers, Daniel Siewiorek, Stephen Smith, Aaron Steinfeld, Anthony Tomasic*

### **Nectar: Human Computer Interaction**

Nectar-36: Intelligent Email: Aiding Users with AI

*Mark Dredze, Hanna M. Wallach, Danny Puller, Tova Brooks, Josh Carroll, Joshua Magarick, John Blitzer, Fernando Pereira*

Nectar-51: Examining Difficulties Software Developers Encounter in the Adoption of Statistical Machine Learning

*Kayur Patel, James Fogarty, James A. Landay, Beverly Harrison*

Nectar-70: Decision-Theoretic User Interface Generation

*Krzysztof Z. Gajos, Daniel S. Weld, Jacob O. Wobbrock*

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### **IAAI-08 Invited Talk**

Boss, the Urban Challenge, and the Promise of Autonomous Driving

*Chris Urmson (Carnegie Mellon University)*

**11:30 am - 12:30 pm**

### **Search I**

648: Minimizing Disk I/O in Two-Bit Breadth-First Search

*Richard E. Korf*

171: Predicting the Performance of IDA\* with Conditional Distributions

*Uzi Zahavi, Ariel Felner, Neil Burch, Robert C. Holte*

993: R\* Search

*Maxim Likhachev, Anthony Stentz*

### **Auctions and Market-Based Systems I**

559: An Expressive Auction Design for Online Display Advertising

*Sébastien Lahaie, David C. Parkes, David M. Pennock*

861: A Theory of Expressiveness in Mechanisms

*Michael Benisch, Norman Sadeh, Tuomas Sandholm*

980: Partially Synchronized DEC-MDPs in Dynamic Mechanism Design

*Sven Seuken, Ruggiero Cavallo, David C. Parkes*

### **Nonmonotonic Reasoning**

239: Nonmonotonic Modes of Inference

*Victor Jauregui*

390: From Qualitative to Quantitative Proofs of Security Properties Using First-Order Conditional Logic

*Joseph Y. Halpern*

683: Non-monotonic Temporal Logics that Facilitate Elaboration Tolerant Revision of Goals

*Chitta Baral, Jicheng Zhao*

## **Approximate Probabilistic Inference 2**

56: Latent Tree Models and Approximate Inference in Bayesian Networks

*Yi Wang, Nevin L. Zhang, Tao Chen*

934: Lifted First-Order Belief Propagation

*Parag Singla, Pedro Domingos*

25: Hybrid Markov Logic Networks

*Jue Wang, Pedro Domingos*

## **Dimensionality Reduction**

89: Sparse Projections over Graph

*Deng Cai, Xiaofei He, Jiawei Han*

966: Distance Metric Learning VS. Fisher Discriminant Analysis

*Babak Alipanahi, Michael Biggs, Ali Ghodsi*

157: AnalogySpace: Reducing the Dimensionality of Common Sense Knowledge

*Robert Speer, Catherine Havasi, Henry Lieberman*

## **Integrated Intelligence: Combining Reasoning, Planning, and Execution**

II-30: The PELA Architecture: Integrating Planning and Learning to Improve Execution

*Sergio Jiménez, Fernando Fernández, Daniel Borrajo*

II-32: Pervasive Diagnosis: The Integration of Diagnostic Goals into Production Plans

*Lukas Kuhn, Bob Price, Johan de Kleer, Minh Do, Rong Zhou*

II-34: Bimodal Spatial Reasoning with Continuous Motion

*Samuel Wintermute, John E. Laird*

## **AI and the Web: Social Networking and Collaboration**

AIW-3: Linking Social Networks on the Web with FOAF: A Semantic Web Case Study

*Jennifer Golbeck, Matthew Rothstein*

AIW-75: Generating Useful Network-based Features for Analyzing Social Networks

*Jun Karamon, Yutaka Matsuo, Mitsuru Ishizuka*

AIW-113: Minimizing the Spread of Contamination by Blocking Links in a Network

*Masahiro Kimura, Kazumi Saito, Hiroshi Motoda*

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### **IAAI-08 Session:**

Emerging: Enabling the Interoperability of Large-Scale Legacy Systems

*Kalyan Moy Gupta, Mike Zang, Adam Gray, David W. Aha, Joe Kriege*

Emerging: Finding Ontological Correspondences for a Domain-Independent Natural Language Dialog Agent

*Hamid Haidarian Shahri, Donald Perlis*

## **1:50 - 2:50 pm**

Regency Ballroom, Hyatt Regency

### **AAAI-08 Invited Talk:**

Making Sense of Complex Networks

*Mark Newman (University of Michigan)*

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### **IAAI-08 Session:**

*Emerging: Semantic Web Development for Traditional Chinese Medicine*

*Zhaohui Wu, Tong Yu, Huajun Chen, Xiaohong Jiang, Chunying Zhou, Yu Zhang, Yuxin Mao, Yi Feng, Meng Cui, Aining Yin*

*Deployed: A Case Study of AI Application on Language Instruction: CSIEC*

*Jiyou Jia*

## **3:00 - 4:00 pm**

### **Satisfiability I**

572: On the Power of Top-Down Branching Heuristics

*Matti Järvisalo, Tommi Junttila*

134: Backdoor Trees

*Marko Samer, Stefan Szeider*

302: Measuring the Hardness of SAT Instances

*Carlos Ansótegui, María Luisa Bonet, Jordi Levy, Felip Manyà*

### **Auctions and Market-Based Systems 2**

463: Efficient Metadeliberation Auctions

*Ruggiero Cavallo, David C. Parkes*

797: Expressive Banner Ad Auctions and Model-Based Online Optimization for Clearing

*Craig Boutilier, David C. Parkes, Tuomas Sandholm, William E. Walsh*

650: Bidding Strategies for Realistic Multi-Unit Sealed-Bid Auctions

*Ioannis A. Vetsikas, Nicholas R. Jennings*

### **Senior Papers I**

Learning to Connect Language and Perception

*Raymond J. Mooney*

An Interaction-Based Approach to Computational Epidemiology

*Christopher L. Barrett, Stephen Eubank, Madhav V. Marathe*

### **Search in Planning**

265: Accuracy of Admissible Heuristic Functions in Selected Planning Domains

*Malte Helmert, Robert Mattmüller*

255: Fast Planning by Search in Domain Transition Graph  
*Yixin Chen, Ruoyun Huang, Weixiong Zhang*

267: Landmarks Revisited  
*Silvia Richter, Malte Helmert, Matthias Westphal*

### **Semi and Unsupervised Learning**

200: Clustering via Random Walk Hitting Time on Directed Graphs  
*Mo Chen, Jianzhuang Liu, Xiaou Tang*

897: Integrating Multiple Learning Components through Markov Logic  
*Thomas G. Dietterich, Xinlong Bao*

120: Multi-View Local Learning  
*Dan Zhang, Fei Wang, Changshui Zhang, Tao Li*

### **Integrated Intelligence: Adaptive and Interactive Robotic Systems**

II-15: Adaptive Control for Autonomous Underwater Vehicles  
*Conor McGann, Frederic Py, Kanna Rajan, John Ryan, Richard Henthorn*

II-19: Spatial Scaffolding for Sociable Robot Learning  
*Cynthia Breazeal, Matt Berlin*

II-35: Incorporating Mental Simulation for a More Effective Robotic Teammate  
*William G. Kennedy, Magdalena D. Bugajska, William Adams, Alan C. Schultz, J. Gregory Trafton*

### **AI and the Web: Information Extraction**

AIW-47: Extracting Relevant Snippets for Web Navigation  
*Qing Li, K. Selçuk Candan, Qi Yan*

AIW-100: Automatic Extraction of Data Points and Text Blocks from 2-Dimensional Plots in Digital Documents  
*Saurabh Kataria, William Browner, Prasenjit Mitra, C. Lee Giles*

AIW-101: Turning Web Text and Search Queries into Factual Knowledge: Hierarchical Class Attribute Extraction  
*Marius Pasca*

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### **IAAI-08 Session:**

*Deployed: Tactical Language and Culture Training Systems: Using Artificial Intelligence to Teach Foreign Languages and Cultures*  
*W. Lewis Johnson, Andre Valente*

*Emerging: Personalisation of Telecommunications Services as Combinatorial Optimisation*  
*David Lesaint, Deepak Mehta, Barry O'Sullivan, Luis Quesada, Nic Wilson*

**4:20 - 5:20 pm**

### **Applications**

473: A Global Constraint for Bin-Packing with Precedences: Application to the Assembly Line Balancing Problem

*Pierre Schaus, Yves Deville*

224: Online Learning with Expert Advice and Finite-Horizon Constraints

*Branislav Kveton, Jia Yuan Yu, Georgios Theodorou, Shie Mannor*

365: Protein Structure Prediction on the Face Centered Cubic Lattice by Local Search

*Manuel Cebrián, Ivan Dotú, Pascal Van Hentenryck, Peter Clote*

### **Coordination and Collaboration**

301: Coalition Structure Generation: Dynamic Programming Meets Anytime Optimization

*Talal Rahwan, Nicholas R. Jennings*

949: Agent Coordination with Regret Clearing

*Sven Koenig, Xiaoming Zheng, Craig Tovey, Richard Borie,*

825: Agent Organized Networks Redux

*Robin Grinton, Katia Sycara, Paul Scerri*

### **Teaching Forum Panel Presentation**

#### **Planning and Scheduling**

358: Planning with Problems Requiring Temporal Coordination

*Andrew Coles, Maria Fox, Derek Long, Amanda Smith*

874: Probabilistic Planning via Determinization in Hindsight

*Sungwook Yoon, Alan Fern, Robert Givan, Subbarao Kambhampati*

620: Optimal Scheduling of Contract Algorithms with Soft Deadlines

*Spyros Angelopoulos, Alejandro López-Ortiz, Angèle M. Hamel*

#### **Nectar: Planning**

Nectar-32: Explicit-State Abstraction: A New Method for Generating Heuristic Functions

*Malte Helmert, Patrik Haslum, Jörg Hoffmann*

Nectar-64: On-line Planning and Scheduling: An Application to Controlling Modular Printers

*Minh B. Do, Wheeler Ruml, Rong Zhou*

Nectar-82: Beyond Classical Planning: Procedural Control Knowledge and Preferences in State-of-the-Art Planners

*Jorge A. Baier, Christian Fritz, Meghyn Bienvenu, Sheila A. McIlraith*

#### **Integrated Intelligence: Compound Reasoning for Complex Decision Making**

II-51: An Integrated Reasoning Approach to Moral Decision-Making

*Morteza Dehghani, Emmett Tomai, Ken Forbus, Matthew Klenk*

II-52: An Integrated Agent for Playing Real-Time Strategy Games  
*Josh McCoy, Michael Mateas*

### **Security and Privacy**

917: Proactive Intrusion Detection  
*Benjamin Liebald, Dan Roth, Neelay Shah, Vivek Srikumar*

746: Learning to Analyze Binary Computer Code  
*Nathan Rosenblum, Xiaojin Zhu, Barton Miller, Karen Hunt*

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#### **IAAI-08 Session:**

*Deployed:* Using AI for Olympic Equestrian Event Preparation  
*Andy Hon Wai CHUN*

*Emerging:* Crops Selection for Optimal Soil Planning using Multiobjective Evolutionary Algorithms  
*Christian Von Lücken, Ricardo Brunelli*

### **Wednesday, July 16**

#### **9:00 – 10:00 am**

Regency Ballroom, Hyatt Regency

#### **AAAI-08 Invited Talk:**

100 Million Years of Evolutionary History of the Human Genome  
*David Haussler (University of California, Santa Cruz)*

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#### **IAAI-08 Session:**

*Emerging:* Reinforcement Learning for Vulnerability Assessment in Peer-to-Peer Networks  
*Scott DeJmal, Alan Fern, Thinh Nguyen*

*Emerging:* In-the-Dark Network Traffic Classification Using Support Vector Machines  
*William H. Turkett, Jr., Andrew V. Karode, Errin W. Fulp*

#### **10:20 - 11:20 am**

#### **Search 2**

85: Learning from Multiple Heuristics  
*Mehdi Samadi, Ariel Felner, Jonathan Schaeffer*

451: Efficient Memoization for Dynamic Programming with Ad-Hoc Constraints  
*Joxan Jaffar, Andrew E. Santosa, Razvan Voicu*

194: A New Incomplete Method for CSP Inconsistency Checking  
*Belaïd Benhamou, Mohamed Réda Saïdi*

### **Game Theory**

49: Strategyproof Classification under Constant Hypotheses: A Tale of Two Functions  
*Reshef Meir, Ariel D. Procaccia, Jeffrey S. Rosenschein*



278: Manipulating the Quota in Weighted Voting Games  
*Michael Zuckerman, Piotr Faliszewski, Yoram Bachrach, Edith Elkind*

675: First-Order Algorithm with  $O(\ln(1/\epsilon))$  Convergence for  $\epsilon$ -Equilibrium in Two-Person Zero-Sum Games  
*Andrew Gilpin, Javier Peña, Tuomas Sandholm*

## **Natural-Language Processing 2**

695: Using Answer Set Programming and Lambda Calculus to Characterize Natural Language Sentences with Normatives and Exceptions  
*Chitta Baral, Juraj Dzifcak, Tran Cao Son*

143: Using Wiktionary for Computing Semantic Relatedness  
*Torsten Zesch, Christof Müller, Iryna Gurevych*

891: Automatic Semantic Relation Extraction with Multiple Boundary Generation  
*Brandon Beamer, Alla Rozovskaya, Roxana Girju*

## **Search and Heuristics**

781: Hypothesis Pruning and Ranking for Large Plan Recognition Problems  
*Gita Sukthankar, Katia Sycara*

807: PBA\*: Using Proactive Search to Make A\* Robust to Unplanned Deviations  
*Paul Breimyer, Peter R. Wurman*

585: Error Classification in Action Descriptions: A Heuristic Approach  
*Thomas Eiter, Michael Fink, Ján Senko*

## **Data Mining and Discriminative Training**

975: Clustering on Complex Graphs  
*Bo Long, Mark (Zhongfei) Zhang, Philip S. Yu, Tianbing Xu*

233: Classification by Discriminative Regularization  
*Bin Zhang, Fei Wang, Ta-Hsin Li, Wen jun Yin, Jin Dong*

126: CRF-OPT: An Efficient High-Quality Conditional Random Field Solver  
*Minmin Chen, Yixin Chen, Michael R. Brent*

## **Physically Grounded AI: Mobile Robotics / Planning**

PGAI-36: Efficient Optimization of Information-Theoretic Exploration in SLAM  
*Thomas Kollar, Nicholas Roy*

PGAI-61: An Efficient Motion Planning Algorithm for Stochastic Dynamic Systems with Constraints on Probability of Failure  
*Masahiro Ono, Brian C. Williams*

PGAI-69: Planning for Human-Robot Interaction Using Time-State Aggregated POMDPs  
*Frank Broz, Illah Nourbakhsh, Reid Simmons*

## **AI and the Web: Enhancing Web Search I**

AIW-16: Metalevel Information in Ontology-Based Applications  
*Thanh Tran, Peter Haase, Boris Motik, Bernardo Cuenca Grau, Ian Horrocks*

AIW-138: A User-Oriented Webpage Ranking Algorithm Based on User Attention Time  
*Songhua Xu, Yi Zhu, Hao Jiang, Francis C.M. Lau*

AIW-151: Concept-Based Feature Generation and Selection for Information Retrieval  
*Ofer Egozi, Evgeniy Gabrilovich, Shaul Markovitch*

Regency Ballroom A/B, Hyatt Regency

### **IAAI-08 Invited Talk: Robert S. Engelmore Memorial Award Lecture**

Toward Cognitive Protheses

*Kenneth M. Ford (Florida Institute for Human and Machine Cognition [IHMC])*

**11:30 am - 12:30 pm**

### **Satisfiability 2**

422: Exploiting Causal Independence Using Weighted Model Counting  
*Wei Li, Pascal Poupart, Peter van Beek*

344: Studies in Solution Sampling  
*Vibhav Gogate, Rina Dechter*

318: Within-problem Learning for Efficient Lower Bound Computation in Max-SAT Solving  
*Han Lin, Kaile Su, Chu-Min Li*

### **Multiagent Systems I**

363: Determining Possible and Necessary Winners under Common Voting Rules Given Partial Orders  
*Lirong Xia, Vincent Conitzer*

256: Multiagent Graph Coloring: Pareto Efficiency, Fairness and Individual Rationality  
*Yaad Blum, Jeffrey S. Rosenschein*

876: Voting on Multiattribute Domains with Cyclic Preferential Dependencies  
*Lirong Xia, Vincent Conitzer, Jérôme Lang*

### **Answer Set Programming I**

160: A Reductive Semantics for Counting and Choice in Answer Set Programming  
*Joohyung Lee, Vladimir Lifschitz, Ravi Palla*

75: Credulous Resolution for Answer Set Programming  
*Piero A. Bonatti, Enrico Pontelli, Tran Cao Son*

654: Efficient Haplotype Inference with Answer Set Programming  
*Esra Erdem, Ferhan Türe*

### **Planning and Scheduling under Uncertainty I**

184: Generating Plans in Concurrent, Probabilistic, Over-Subscribed Domains  
*Li Li, Nilufer Onder*

786: Towards Faster Planning with Continuous Resources in Stochastic Domains  
*Janusz Marecki, Milind Tambe*

913: Partitioned External-Memory Value Iteration  
*Peng Dai, Mausam, Daniel S. Weld*

### **Ensemble Learning**

976: Constraint Projections for Ensemble Learning  
*Daoqiang Zhang, Songcan Chen, Zhi-Hua Zhou, Qiang Yang*

50: From Comparing Clusterings to Combining Clusterings  
*Zhiwu Lu, Yuxin Peng, Jianguo Xiao*

303: Semi-Supervised Ensemble Ranking  
*Steven C.H. Hoi, Rong Jin*

### **Physically Grounded AI: Activity Recognition**

PGAI-10: The Hidden Permutation Model and Location-Based Activity Recognition  
*Hung H. Bui, Dinh Phung, Svetha Venkatesh, Hai Phan*

PGAI-11: CIGAR: Concurrent and Interleaving Goal and Activity Recognition  
*Derek Hao Hu, Qiang Yang*

PGAI-23: Feature Selection for Activity Recognition in Multi-Robot Domains  
*Douglas L. Vail, Manuela M. Veloso*

### **AI and the Web: Enhancing Web Search 2**

AIW-36: Intelligent Output Interface for Intelligent Medical Search Engine  
*Gang Luo*

AIW-65: Question Utility: A Novel Static Ranking of Question Search  
*Young-In Song, Chin-Yew Lin, Yunbo Cao, Hae-Chang Rim*

AIW-70: Query-URL Bipartite Based Approach to Personalized Query Recommendation  
*Lin Li, Zhenglu Yang, Ling Liu, Masaru Kitsuregawa*

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### **IAAI-08 Session:**

*Emerging:* Learning Sparse Kernels from 3D Surfaces for Heart Wall Motion Abnormality Detection  
*Glenn Fung, Sriram Krishnan, R. Bharat Rao, Hui Chen*

*Emerging:* On-line Recognition of Surgical Activity for Monitoring in the Operating Room  
*N. Paday, T. Blum, H. Feussner, M-O. Berger, N. Navab*

**1:50 - 2:50 pm**

Regency Ballroom, Hyatt Regency

### **AAAI-08 Invited Talk**

What Is To Be Done?

*Stuart Russell (University of California, Berkeley)*

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**IAAI-08 Session:**

*Emerging:* Local Search for Optimal Global Map Generation Using Mid-Decadal Landsat Images  
*Robert A. Morris, John Gasch, Lina Khatib, Steven Covington*

*Emerging:* Learning to Improve Earth Observation Flight Planning  
*Robert A. Morris, Nikunj Oza, Leslie Keely, Elif Kürklü, Anthony Strawa*

**3:00 - 4:00 pm**

**AAAI-08 Outstanding Papers**

Optimal False-Name-Proof Voting Rules with Costly Voting  
*Liad Wagman, Vincent Conitzer*

How Good is Almost Perfect?  
*Malte Helmert, Gabriele Röger*

*Honorable Mention*

On the Progression of Situation Calculus Basic Action Theories: Resolving a 10-year-old Conjecture  
*Stavros Vassos, Hector J. Levesque*

**Communication and Coordination**

558: Mathematical Modeling and Convergence Analysis of Trail Formation  
*Sameena Shah, Ravi Kothari, Jayadeva, Suresh Chandra*

109: Memetic Networks: Analyzing the Effects of Network Properties in Multi-Agent Performance  
*Ricardo M. Araujo, Luis C. Lamb*

92: Semantical Considerations on Dialectical and Practical Commitments  
*Munindar P. Singh*

**Reasoning with Beliefs**

452: Factored Models for Probabilistic Modal Logic  
*Afsaneh Shirazi, Eyal Amir*

690: An AGM-Based Belief Revision Mechanism for Probabilistic Spatio-Temporal Logics  
*Austin Parker, Guillaume Infantes, V.S. Subrahmanian, John Grant*

213: Parallel Belief Revision  
*James Delgrande, Yi Jin*

**Planning and Scheduling under Uncertainty 2**

906: Unknown Rewards in Finite-Horizon Domains  
*Colin McMillen, Manuela Veloso*

287: Fusing Procedural and Declarative Planning Goals for Nondeterministic Domains  
*Dzmitry Shaparau, Marco Pistore, Paolo Traverso*

326: Route Planning under Uncertainty: The Canadian Traveller Problem  
*Evdokia Nikolova, David R. Karger*

## **Reasoning about Actions and Plans**

885: On-Line Case-Based Plan Adaptation for Real-Time Strategy Games  
*Neha Sugandh, Santiago Ontañón, Ashwin Ram*

704: HTN-MAKER: Learning HTNs with Minimal Additional Knowledge Engineering Required  
*Chad Hogg, Héctor Muñoz-Avila, Ugur Kuter*

859: Efficient Learning of Action Schemas and Web-Service Descriptions  
*Thomas J. Walsh, Michael L. Littman*

## **Physically Grounded AI: Model Transfer**

PGAI-55: Transferring Localization Models across Space  
*Sinno Jialin Pan, Dou Shen, Qiang Yang, James T. Kwok*

PGAI-67: Transferring Multi-device Localization Models using Latent Multi-task Learning  
*Vincent Wenchen Zheng, Sinno Jialin Pan, Qiang Yang, Jeffrey Junfeng Pan*

PGAI-68: Transferring Localization Models over Time  
*Vincent Wenchen Zheng, Evan Wei Xiang, Qiang Yang, Dou Shen*

## **AI and the Web: Machine Learning and the Web**

AIW-12: A Utility-Theoretic Approach to Privacy and Personalization  
*Andreas Krause, Eric Horvitz*

AIW-140: Semi-Supervised Learning for Blog Classification  
*Daisuke Ikeda, Hiroya Takamura, Manabu Okumura*

AIW-143: An Unsupervised Approach for Product Record Normalization across Different Web Sites  
*Tak-Lam Wong, Tik-Shun Wong, Wai Lam*

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### **IAAI-08 Session:**

*Emerging:* A Hybrid Approach to Convoy Movement Planning in an Urban City  
*Ramesh Thangarajoo, Lucas Agussurja, Hoong Chuin Lau*

*Emerging:* A Vehicle Routing System to Solve a Periodic Vehicle Routing Problem for a Food Chain in Hong Kong  
*Jianfeng Zhu, Wenbin Zhu, Chan Hou Che, Andrew Lim*

**4:20 - 5:20 pm**

## **Constraints Reasoning**

34: Virtual Arc Consistency for Weighted CSP  
*M. Cooper, S. de Givry, M. Sanchez, T. Schiex, M. Zytnicki*

257: Reasoning with Cardinal Directions: An Efficient Algorithm  
*Xiaotong Zhang, Weiming Liu, Sanjiang Li, Mingsheng Ying*

## **Multiagent Systems 2**

292: Coordination and Multi-Tasking Using EMT  
*Zinovi Rabinovich, Nir Pochter, Jeffrey S. Rosenschein*

144: Physical Search Problems Applying Economic Search Models  
*Yonatan Aumann, Noam Hazon, Sarit Kraus, David Sarne*

858: The Impact of Vertical Specialization on Hierarchical Multi-Agent Systems  
*Steven Okamoto, Paul Scerri, Katia Sycara*

## **Common-Sense Reasoning**

13: A Semantic Approach for Iterated Revision in Possibilistic Logic  
*Guilin Qi*

731: A First-Order Theory of Stanislavskian Scene Analysis  
*Leora Morgenstern*

375: Horn Complements: Towards Horn-to-Horn Belief Revision  
*Marina Langlois, Robert H. Sloan, Balázs Szörényi, György Turán*

## **Senior Papers 2**

Intelligence in Wikipedia  
*Daniel S. Weld, Fei Wu, Eytan Adar, Saleema Amershi, James Fogarty, Raphael Hoffmann, Kayur Patel, Michael Skinner*

Artificial Intelligence Needs Open-Access Knowledgebase Contents  
*Erik Sandewall*

## **Transfer Learning and Activity Recognition**

138: Transfer Learning via Dimensionality Reduction  
*Sinno Jialin Pan, James T. Kwok, Qiang Yang*

432: Zero-data Learning of New Tasks  
*Hugo Larochelle, Dumitru Erhan, Yoshua Bengio*

902: Learning Hidden Curved Exponential Family Models to Infer Face-to-Face Interaction Networks from Situated Speech Data  
*Danny Wyatt, Tanzeem Choudhury, Jeff Bilmes*

## **Physically Grounded AI: Reinforcement Learning**

PGAI-32: Maximum Entropy Inverse Reinforcement Learning  
*Brian D. Ziebart, Andrew Maas, J. Andrew Bagnell, Anind K. Dey*

PGAI-80: Adaptive Importance Sampling with Automatic Model Selection in Value Function Approximation  
*Hiroataka Hachiya, Takayuki Akiyama, Masashi Sugiyama, Jan Peters*

## **AI and the Web: Recommendation and Collaboration**

AIW-17: Efficient Querying Relaxed Dominant Relationship between Product Items  
Based on Rank Aggregation  
*Zhenglu Yang, Lin Li, Masaru Kitsuregawa*

AIW-103: On the Enactability of Business Protocols  
*Nirmit Desai, Munindar P. Singh*

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### **IAAI-08 Session:**

*Emerging:* Application of Artificial Intelligence to Operational Real-Time Clear-Air Turbulence Prediction  
*Jennifer Abernethy, Robert Sharman, Elizabeth Bradley*

*Emerging:* COACH - Cumulative Online Algorithm for Classification of Handwriting Deficiencies  
*Ariella Richardson, Sarit Kraus, Patrice L. Weiss, Sara Rosenblum*

**6:00 – 9:30 pm**

### **AAAI-08 Poster Demo Reception**

**Thursday, July 17**

**9:00 – 10:00 am**

### **AAAI-08 Invited Talks**

CC12, Hyatt Conference Center  
From Images to Scenes: Using Lots of Data to Infer Geometric, Photometric and Semantic Scene  
Properties from a Single Image  
*Alexei A. Efros (Carnegie Mellon University)*

Regency Ballroom C, Hyatt Regency  
Sense and Sensibility: Sentiment Analysis, Opinion Mining, and the Computational Treatment of Subjective  
Language  
*Lillian Lee (Cornell University)*

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### **IAAI-08 Session:**

*Emerging:* Diagnosing Faults in Electrical Power Systems of Spacecraft and Aircraft  
*Ole J. Mengshoel, Adnan Darwiche, Keith Cascio, Mark Chavira, Scott Poll, Serdar Uckun*

*Emerging:* Real-time Alert Correlation Using Stream Data Mining Techniques  
*Reza Sadoddin, Ali A. Ghorbani*

**10:20 - 11:20 am**

### **Nectar: Constraint Satisfaction**

Nectar-12: Decompositions of Grammar Constraints  
*Claude-Guy Quimper, Toby Walsh*

Nectar-14: Breaking Value Symmetry  
*Toby Walsh*

## **Multiagent Systems, Game Theory**

579: A Computational Analysis of the Tournament Equilibrium Set  
*Felix Brandt, Felix Fischer, Paul Harrenstein, Maximilian Mair*

197: On the Dimensionality of Voting Games  
*Edith Elkind, Leslie Ann Goldberg, Paul Goldberg, Michael Wooldridge*

703: Approximability of Manipulating Elections  
*Eric Brelsford, Piotr Faliszewski, Edith Hemaspaandra, Henning Schnoor, Ilka Schnoor*

## **Description Logics**

596: Terminological Reasoning in SHIQ with Ordered Binary Decision Diagrams  
*Sebastian Rudolph, Markus Krötzsch, Pascal Hitzler*

88: Prime Implicate Normal Form for ALC Concepts  
*Meghyn Bienvenu*

630: Worst-case Optimal Conjunctive Query Answering for an Expressive Description Logic without Inverses  
*Magdalena Ortiz, Mantas Simkus, Thomas Eiter*

## **Model-Based Reasoning I**

625: Computing Observation Vectors for Max-Fault Min-Cardinality Diagnoses  
*Alexander Feldman, Gregory Provan, Arjan van Gemund*

725: Computing Minimal Diagnoses by Greedy Stochastic Search  
*Alexander Feldman, Gregory Provan, Arjan van Gemund*

528: Optimal Metric Planning with State Sets in Automata Representation  
*Björn Ulrich Borowsky, Stefan Edelkamp*

## **Kernel Methods and Neural Networks**

94: A Case Study on the Critical Role of Geometric Regularity in Machine Learning  
*Jason Gauci, Kenneth O. Stanley*

253: Dimension Amnesic Pyramid Match Kernel  
*Yi Liu, Xu-Lei Wang, Hongbin Zha*

895: Manifold Integration with Markov Random Walks  
*Heeyoul Choi, Seungjin Choi, Yoonsuck Choe*

## **Physically Grounded AI: Vision / Activity Recognition**

PGAI-22: Multimodal People Detection and Tracking in Crowded Scenes  
*Luciano Spinello, Rudolph Triebel, Roland Siegwart*

PGAI-56: Structure Learning on Large Scale Common Sense Statistical Models of Human State  
*William Pentney, Matthai Philipose, Jeff Bilmes*

PGAI-83: Reducing Particle Filtering Complexity for 3D Motion Capture using Dynamic Bayesian Networks  
*Cédric Rose, Jamal Saboune, François Charpillet*



## **AI and the Web: Ontologies**

AIW-28: Supporting Manual Mapping Revision using Logical Reasoning  
*Christian Meilicke, Heiner Stuckenschmidt, Andrei Tamilin*

AIW-32: Decoding Wikipedia Categories for Knowledge Acquisition  
*Vivi Nastase, Michael Strube*

AIW-142: Neural Network based Constraint Satisfaction in Ontology Mapping  
*Ming Mao, Yefei Peng, Michael Spring*

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### **IAAI-08 Invited Talk**

Realizing Claytronics: A Challenge for AI  
*Seth Copen Goldstein (Carnegie Mellon University)*

**11:30 am - 12:30 pm**

### **Satisfiability 3**

780: Clause Learning Can Effectively P-Simulate General Propositional Resolution  
*Philipp Hertel, Fahiem Bacchus, Toniann Pitassi, Allen Van Gelder*

165: Relaxed Survey Propagation: A Sum-Product Algorithm for Max-SAT  
*Hai Leong Chieu, Wee Sun Lee*

24: Phase Transitions and Complexity of Weighted Satisfiability and Other Intractable Parameterized Problems  
*Yong Gao*

### **Multiagent Systems: Uncertainty**

401: Value-Based Policy Teaching with Active Indirect Elicitation  
*Haoqi Zhang, David Parkes*

686: Generalized Point Based Value Iteration for Interactive POMDPs  
*Prashant Doshi, Dennis Perez*

768: Bayesian Coalitional Games  
*Samuel Leong, Yoav Shoham, Philip Kilby, Vangelis Markakis, Pinar Keskinocak*

### **Automated Reasoning**

538: An Extended Interpreted System Model for Epistemic Logics  
*Kaile Su, Abdul Sattar*

862: New Compilation Languages Based on Structured Decomposability  
*Knot Pipatsrisawat, Adnan Darwiche*

505: Grounding with Bounds  
*Johan Wittocx, Maarten Mariën, Marc Denecker*

## **Reasoning about Action and Change**

163: Learning Generalized Plans Using Abstract Counting  
*Siddharth Srivastava, Neil Immerman, Shlomo Zilberstein*

997: Finding State Similarities for Faster Planning  
*Christian Fritz*

91: Reasoning about Large Taxonomies of Actions  
*Yilan Gu, Mikhail Soutchanski*

## **Feature Selection**

103: Bounding the False Discovery Rate in Local Bayesian Network Learning  
*Ioannis Tsamardinos, Laura E. Brown*

264: Trace Ratio Criterion for Feature Selection  
*Feiping Nie, Shiming Xiang, Yangqing Jia, Changshui Zhang, Shuicheng Yan*

790: Markov Blanket Feature Selection for Support Vector Machines  
*Jianqiang Shen, Lida Li, Weng-Keen Wong*

## **Physically Grounded AI: Robotics / Perception**

PGAI-3: A Fast Data Collection and Augmentation Procedure for Object Recognition  
*Benjamin Sapp, Ashutosh Saxena, Andrew Y. Ng*

PGAI-38: Anticipatory Perceptual Simulation for Human-Robot Joint Practice: Theory and Application Study  
*Guy Hoffman, Cynthia Breazeal*

## **Nectar: Learning**

Nectar-34: Using Signals of Human Interest to Enhance Single-document Summarization  
*Krysta M. Svore, Lucy Vanderwende, Christopher J.C. Burges*

Nectar-67: An Analysis of Transformational Analogy: General Framework and Complexity  
*Vithal Kuchibatla, Héctor Muñoz-Avila*

Nectar-87: Learning and Inference with Constraints  
*Ming-Wei Chang, Lev Ratinov, Nicholas Rizzolo, Dan Roth*

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## **IAAI-08 Session:**

*Deployed: The Law of Choice and the Decision Not to Decide*  
*David C. Wilson, Suzanne Leland, Kenneth Godwin, Andrew Baxter, Ashley Levy, Jamie Smart, Nadia Najar, Jayakrishnan Andaparambil*

*Emerging: Adaptive Treatment of Epilepsy via Batch-mode Reinforcement Learning*  
*Arthur Guez, Robert D. Vincent, Massimo Avoli, Joelle Pineau*

**1:50 - 2:50 pm**

### **Game Playing**

754: Simulation-Based Approach to General Game Playing  
*Hilmar Finnsson, Yngvi Björnsson*

513: On Range of Skill  
*Thomas Dueholm Hansen, Peter Bro Miltersen, Troels Bjerre Sørensen*

### **Argumentation**

243: Pareto Optimality in Abstract Argumentation  
*Iyad Rahwan, Kate Larson*

8: Argument Theory Change Applied to Defeasible Logic Programming  
*Martin O. Moguillansky, Nicolás D. Rotstein, Marcelo A. Falappa, Alejandro J. García, Guillermo R. Simari*

30: Reasoning about the Appropriateness of Proponents for Arguments  
*Anthony Hunter*

### **Answer Set Programming 2**

155: Hyperequivalence of Logic Programs with Respect to Supported Models  
*Mirosław Truszczynski, Stefan Woltran*

215: Loop Formulas for Logic Programs with Arbitrary Constraint Atoms  
*Jia-Huai You, Guohua Liu*

623: A Meta-Programming Technique for Debugging Answer-Set Programs  
*Martin Gebser, Jörg Pührer, Torsten Schaub, Hans Tompits*

### **Graphical Models**

169: Dormant Independence  
*Ilya Shpitser, Judea Pearl*

241: A General Framework for Generating Multivariate Explanations in Bayesian Networks  
*Changhe Yuan, Tsai-Ching Lu*

693: Lifted Probabilistic Inference with Counting Formulas  
*Brian Milch, Luke S. Zettlemoyer, Kristian Kersting, Michael Haimes, Leslie Pack Kaelbling*

### **Natural-Language Processing 3**

474: Hidden Dynamic Probabilistic Models for Labeling Sequence Data  
*Xiaofeng Yu, Wai Lam*

651: Adapting ADtrees for High Arity Features  
*Robert Van Dam, Irene Langkilde-Geary, Dan Ventura*

899: Active Learning for Pipeline Models  
*Dan Roth, Kevin Small*

## **Human Computer Interaction I**

852: Automating To-Do Lists for Users: Interpretation of To-Dos for Selecting and Tasking Agents  
*Yolanda Gil, Varun Ratnakar*

487: Prediction and Change Detection in Sequential Data for Interactive Applications  
*Jun Zhou, Li Cheng, Walter F. Bischof*

## **Nectar: Learning and Activity Recognition**

Nectar-9: Make3D: Depth Perception from a Single Still Image  
*Ashutosh Saxena, Min Sun, Andrew Y. Ng*

Nectar-57: Achieving Master Level Play in 9 x 9 Computer Go  
*Sylvain Gelly, David Silver*

Nectar-66: Video Activity Recognition in the Real World  
*Anthony Hoogs, A. G. Amitha Perera*

**3:00 - 4:00 pm**

## **Computational Biology**

541: Generating Application-Specific Benchmark Models for Complex Systems  
*Jun Wang, Gregory Provan*

678: Using Knowledge Driven Matrix Factorization to Reconstruct Modular Gene Regulatory Network  
*Yang Zhou, Zheng Li, Xuerui Yang, Linxia Zhang, Shireesh Srivastava, Rong Jin, Christina Chan*

## **Distributed COP**

830: Resource Constrained Distributed Constraint Optimization with Virtual Variables  
*Toshihiro Matsui, Hiroshi Matsuo, Marius Silaghi, Katsutoshi Hirayama, Makoto Yokoo*

125: Anytime Local Search for Distributed Constraint Optimization  
*Roie Zivan*

313: H-DPOP: Using Hard Constraints for Search Space Pruning in DCOP  
*Akshat Kumar, Adrian Petcu, Boi Faltings*

## **Logic Programming and Knowledge Engineering**

185: Revising Imprecise Probabilistic Beliefs in the Framework of Probabilistic Logic Programming  
*Anbu Yue, Weiru Liu*

74: Abductive Logic Programming by Nonground Rewrite Systems  
*Fangzhen Lin, Jia-Huai You*

701: Minimal Contraction of Preference Relations  
*Denis Mindolin, Jan Chomicki*

## **POMDPs**

217: A Variance Analysis for POMDP Policy Evaluation  
*Mahdi Milani Fard, Joelle Pineau, Peng Sun*

464: Symbolic Heuristic Search Value Iteration for Factored POMDPs  
*Hyeong Seop Sim, Kee-Eung Kim, Jin Hyung Kim, Du-Seong Chang, Myoung-Wan Koo*

469: Exploiting Symmetries in POMDPs for Point-Based Algorithms  
*Kee-Eung Kim*

### **Reinforcement Learning / Invited Nectar**

762: Economic Hierarchical Q-Learning  
*Erik G. Schultink, Ruggiero Cavallo, David C. Parkes*

935: Potential-based Shaping in Model-based Reinforcement Learning  
*John Asmuth, Michael L. Littman, Robert Zinkov*

Nectar: Predicting Human Brain Activity Associated with the Meanings of Nouns  
*Tom Mitchell, Svetlana Shinkareva, Andrew Carlson, Kai-Min Chang, Vicente Malave, Rob Mason, Marcel Just*

### **Human Computer Interaction 2**

834: Exposing Parameters of a Trained Dynamic Model for Interactive Music Creation  
*Dan Morris, Ian Simon, Sumit Basu*

789: Another Look at Search-Based Drama Management  
*Mark J. Nelson, Michael Mateas*

252: Towards Automatic Animated Storyboarding  
*Patrick Ye, Timothy Baldwin*

### **Nectar / Senior: Knowledge Representation and Logic**

Nectar-31: Abduction with Bounded Treewidth: From Theoretical Tractability to Practically Efficient Computation  
*Georg Gottlob, Reinhard Pichler, Fang Wei*

Nectar-56: Magic Sets for Data Integration  
*Wolfgang Faber, Gianluigi Greco, Nicola Leone*

Senior: What Is Answer Set Programming?  
*Vladimir Lifschitz*

**4:20 - 5:20 pm**

### **Multiagent Systems 3**

800: Achieving Cooperation in a Minimally Constrained Environment  
*Steven Damer, Maria Gini*

448: Computer-Aided Proofs of Arrow's and Other Impossibility Theorems  
*Fangzhen Lin, Pingzhong Tang*

### **Computational Complexity**

901: On the Decidability of Role Mappings between Modular Ontologies  
*Jie Bao, George Voutsadakis, Giora Slutzki, Vasant Honavar*

181: Extending the Knowledge Compilation Map: Krom, Horn, Affine and Beyond  
*Hélène Fargier, Pierre Marquis*

## **Model-Based Reasoning 2**

110: A Scalable Jointree Algorithm for Diagnosability  
*Anika Schumann, Jinbo Huang*

198: A Formalization of Program Debugging in the Situation Calculus  
*Yongmei Liu*

## **Decision Making**

813: Preference Aggregation with Graphical Utility Models  
*Christophe Gonzales, Patrice Perny, Sergio Queiroz*

857: Optimal Testing of Structured Knowledge  
*Michael Munie, Yoav Shoham*

1030: Piecewise Linear Dynamic Programming for Constrained POMDPs  
*Joshua D. Isom, Sean P. Meyn, Richard D. Braatz*

## **Natural-Language Processing 4**

886: Cross-lingual Propagation for Morphological Analysis  
*Benjamin Snyder, Regina Barzilay*

915: Speech-enabled Card Games for Language Learners  
*Ian McGraw, Stephanie Seneff*

316: Discourse Topic and Gestural Form  
*Jacob Eisenstein, Regina Barzilay, Randall Davis*

## **AI and the Web: Mining Web Logs and Blogs**

AIW-64: Mining Translations of Web Queries from Web Click-through Data  
*Rong Hu, Weizhu Chen, Jian Hu, Yansheng Lu, Zheng Chen, Qiang Yang*

AIW-108: Finding Cars, Goddesses and Enzymes: Parametrizable Acquisition of Labeled Instances for Open-Domain Information Extraction  
*Benjamin Van Durme, Marius Pasca*

AIW-123: Hierarchical Location and Topic Based Query Expansion  
*Shu Huang, Qiankun Zhao, Prasenjit Mitra, C. Lee Giles*