

AAAI-10 / IAAI-10 Technical Program Schedule

Monday, July 12

6:00 – 7:00 pm

AAAI-10 Opening Reception

Tuesday, July 13

8:30 - 9:00 am

AAAI-10/IAAI-10 Opening Ceremony

Welcome and Opening Remarks

Outstanding Award Presentations -- Papers, SPC Member, PC Member

Maria Fox and David Poole, AAAI-10 Program Cochairs

IAAI Welcome, Robert S. Engelmore Award, Deployed Application Award Announcements

Nestor Rychtyckyj, IAAI-10 Conference Chair, Daniel Shapiro, IAAI-10 Program Cochair, and

David Leake, *AI Magazine* Editor-in-Chief

AAAI Classic Paper and Distinguished Service Awards

Eric Horvitz, AAAI Past President and Awards Committee Chair

Henry Kautz, AAAI President

9:00 – 10:00 am

AAAI-10 Keynote Address: Intelligent Interaction with the Real World

Leslie Pack Kaelbling (Massachusetts Institute of Technology)

10:20 - 11:20 am

Dimensionality Reduction 1

109: Two-Stage Sparse Representation for Robust Recognition on Large-Scale Database

Ran He, BaoGang Hu, Wei-shi Zheng, YanQing Guo

115: Discriminant Laplacian Embedding

Hua Wang, Heng Huang, Chris Ding

469: Gaussian Process Latent Random Field

Guoqiang Zhong, Wu-Jun Li, Dit-Yan Yeung, Xinwen Hou, Cheng-Lin Liu

Search 1

103: EWLS: A New Local Search for Minimum Vertex Cover

Shaowei Cai, Kaile Su, Qingliang Chen

207: Optimal Rectangle Packing on Non-Square Benchmarks

Eric Huang, Richard E. Korf

99: 1.6-Bit Pattern Databases

Teresa M. Breyer, Richard E. Korf

Game Playing

180: Symmetry Detection in General Game Playing

Stephan Schiffel

546: A General Game Description Language for Incomplete Information Games
Michael Thielscher

777: Learning Simulation Control in General Game-Playing Agents
Hilmar Finnsson, Yngvi Björnsson

Auctions 1

Challenges in AI: 936: Hidden Market Design
Sven Seuken, Kamal Jain, David C. Parkes

205: Envy Quotes and the Iterated Core-Selecting Combinatorial Auction
Abraham Othman, Tuomas Sandholm

455: Dynamic Auction: A Tractable Auction Procedure
Dongmo Zhang, Wei Huang, Laurent Perrussel

Learning Graphical Models

506: Properties of Bayesian Dirichlet Scores to Learn Bayesian Network Structures
Cassio P. de Campos, Qiang Ji

930: Respecting Markov Equivalence in Computing Posterior Probabilities of Causal Graphical Features
Eun Yong Kang, Ilya Shpitser, Eleazar Eskin

1066: A Topic Model for Linked Documents and Update Rules for its Estimation
Zhen Guo, Shenghuo Zhu, Zhongfei (Mark) Zhang, Yun Chi, Yihong Gong

Path Planning 1

456: Finding Optimal Solutions to Cooperative Pathfinding Problems
Trevor Standley

980: Search-Based Path Planning with Homotopy Class Constraints
Subhrajit Bhattacharya, Vijay Kumar, Maxim Likhachev

20: Lazy Theta*: Any-Angle Path Planning and Path Length Analysis in 3D
Alex Nash, Sven Koenig, Craig Tovey

AI and the Web 1: Mining Logs

41: Diversifying Query Suggestion Results
Hao Ma, Michael R. Lyu, Irwin King

12: Session Based Click Features for Recency Ranking
Yoshiyuki Inagaki, Narayanan Sadagopan, Georges Dupret, Ciya Liao, Anlei Dong, Yi Chang, Zhaohui Zheng

30: Prioritization of Domain-Specific Web Information Extraction
Jian Huang, Cong Yu

IAAI-10 Invited Talk: Robert S. Engelmore Memorial Award Lecture

Cancer: A Computational Disease that AI Can Cure

Jay M. Tenenbaum (CollabRx Inc.)

11:30 am – 12:30 pm

Dimensionality Reduction 2

966: Conformal Mapping by Computationally Efficient Methods

Stefan Pintilie, Ali Ghodsi

616: Non-I.I.D. Multi-Instance Dimensionality Reduction by Learning a Maximum Bag Margin Subspace

Wei Ping, Ye Xu, Kexin Ren, Chi-Hung Chi, Furao Shen

332: Multi-Instance Dimensionality Reduction

Yu-Yin Sun, Michael K. Ng, Zhi-Hua Zhou

Search 2

248: Using Lookaheads with Optimal Best-First Search

Roni Stern, Tamar Kulberis, Ariel Felner, Robert Holte

839: Understanding the Success of Perfect Information Monte Carlo Sampling in Game Tree Search

Jeffrey Long, Nathan R. Sturtevant, Michael Buro, Timothy Furtak

1031: Parallel Depth First Proof Number Search

Tomoyuki Kaneko

Coalitional Games

Challenges in AI: 123: Collusion Detection in Online Bridge

Jeff Yan

196: Approximate Coalition Structure Generation

Travis C. Service, Julie A. Adams

235: Transferable Utility Planning Games

Ronen I. Brafman, Carmel Domshlak, Yagil Engel, Moshe Tennenholtz

Auctions 2

852: Automated Channel Abstraction for Advertising Auctions

William E. Walsh, Craig Boutilier, Tuomas Sandholm, Rob Shields, George Nemhauser, David C. Parkes

885: Stability and Incentive Compatibility in a Kernel-Based Combinatorial Auction

Sébastien Lahaie

916: Asymmetric Spite in Auctions

Ankit Sharma, Tuomas Sandholm

Learning in Graphs 1

369: Latent Variable Model for Learning in Pairwise Markov Networks

Saeed Amizadeh, Milos Hauskrecht

458: Transductive Learning on Adaptive Graphs
Yan-Ming Zhang, Yu Zhang, Dit-Yan Yeung, Cheng-Lin Liu, Xinwen Hou

317: Constrained Co-Clustering for Textual Documents
Yangqiu Song, Shimei Pan, Shixia Liu, Furu Wei, Michelle X. Zhou, Weihong Qian

Path Planning 2

638: g-Planner: Real-Time Motion Planning and Global Navigation Using GPUs
Jia Pan, Christian Lauterbach, Dinesh Manocha

689: A Single-Step Maximum A Posteriori Update for Bearing-Only SLAM
Stephen Tully, George Kantor, Howie Choset

179: Collaborative Filtering Meets Mobile Recommendation: A User-Centered Approach
Vincent W. Zheng, Bin Cao, Yu Zheng, Xing Xie, Qiang Yang

AI and the Web 2: Representation and Reasoning

27: Integrity Constraints in OWL
Jiao Tao, Evren Sirin, Jie Bao, Deborah L. McGuinness

153: Materializing and Persisting Inferred and Uncertain Knowledge in RDF Datasets
James P. McGlothlin, Latifur Khan

91: A General Framework for Representing and Reasoning with Annotated Semantic Web Data
Umberto Straccia, Nuno Lopes, Gergely Lukácsy, Axel Polleres

IAAI-10 Session: Scheduling & Planning

17: Optimizing Limousine Service with AI (*Deployed*)
Andy Hon Wai Chun

60: Towards Applying Interactive POMDPs to Real-World Adversary Modeling
Brenda Ng, Carol Meyers, Kofi Boakye, John Nitao

1:50 - 2:50 pm

AAAI-10 Invited Talk: Systems with General Intelligence: A New Perspective
Michael Thielscher (The University of New South Wales)

IAAI-10 Session: Health & Medicine

35: Estimation of Human Internal Temperature from Wearable Physiological Sensors
Mark. J. Buller, William J. Tharion, Reed W. Hoyt, Odest Chadwicke Jenkins

42: Ambulatory Energy Expenditure Estimation: A Machine Learning Approach
Junaith Ahemed Shahabdeen, Amit Baxi, Lama Nachman

3:00 - 4:00 pm

Dimensionality Reduction 3

1070: Non-Metric Locality-Sensitive Hashing
Yadong Mu, Shuicheng Yan

161: Non-Negative Matrix Factorization with Constraints
Haifeng Liu, Zhaohui Wu

262: Nonnegative Matrix Factorization Clustering on Multiple Manifolds
Bin Shen, Luo Si

Search 3

356: Searching without a Heuristic: Efficient Use of Abstraction
Bradford Larsen, Ethan Burns, Wheeler Ruml, Robert C. Holte

292: Search Space Reduction Using Swamp Hierarchies
Nir Pochter, Aviv Zohar, Jeffrey S. Rosenschein, Ariel Felner

114: Symmetry within Solutions
Marijn Heule, Toby Walsh

Game Theoretic Resource Allocation

151: Urban Security: Game-Theoretic Resource Allocation in Networked Physical Domains
Jason Tsai, Zhengyu Yin, Jun-young Kwak, David Kempe, Christopher Kiekintveld, Milind Tambe

212: Security Games with Arbitrary Schedules: A Branch and Price Approach
Manish Jain, Erim Kardes, Christopher Kiekintveld, Milind Tambe, Fernando Ordóñez

682: Complexity of Computing Optimal Stackelberg Strategies in Security Resource Allocation Games
Dmytro Korzhuk, Vincent Conitzer, Ronald Parr

Mechanism Design 1

75: Approximation Algorithms and Mechanism Design for Minimax Approval Voting
Ioannis Caragiannis, Dimitris Kalaitzis, Evangelos Markakis

30: Can Approximation Circumvent Gibbard-Satterthwaite?
Ariel D. Procaccia

210: Nonmanipulable Randomized Tournament Selections
Alon Altman, Robert Kleinberg

Learning in Graphs 2

388: Multi-Label Learning with Weak Label
Yu-Yin Sun, Yin Zhang, Zhi-Hua Zhou

163: Transmission Network Expansion Planning with Simulation Optimization
Russell Bent, Alan Berscheid, G. Loren Toole

190: Exact Algorithms and Experiments for Hierarchical Tree Clustering
Jiong Guo, Sepp Hartung, Christian Komusiewicz, Rolf Niedermeier, Johannes Uhlmann

Robot Modelling

340: Latent Class Models for Algorithm Portfolio Methods
Bryan Silverthorn, Risto Miikkulainen

422: The Tree Representation of Feasible Solutions for the TSP with Pickup and Delivery and LIFO Loading

Dejian Tu, Songshan Guo, Hu Qin, Wee-Chong Oon, Andrew Lim

999: A Computational Model for Saliency Maps by Using Local Entropy

Yuwei Lin, Bin Fang, Yuanyan Tang

AI and the Web 3: Trust

104: On the Reputation of Agent-Based Web Services

Babak Khosravifar, Jamal Bentahar, Ahmad Moazin, Philippe Thiran

51: Subjective Trust Inference in Composite Services

Lei Li, Yan Wang

128: Optimal Social Trust Path Selection in Complex Social Networks

Guanfeng Liu, Yan Wang, Mehmet A. Orgun

IAAI-10 Session: Knowledge-Based Systems I

21: Reinforcement Learning for Closed-Loop Propofol Anesthesia: A Human Volunteer Study

Brett L Moore, Periklis Panousis, Vivek Kulkarni, Larry D Pyeatt, Anthony G Doufas

53: Sentiment Extraction: Integrating Statistical Parsing, Semantic Analysis, and Common Sense Reasoning

Lokendra Shastri, Anju G. Parvathy, Abhishek Kumar, John Wesley, Rajesh Balakrishnan

4:20 - 5:20 pm

Dimensionality Reduction 4

137: Semi-Supervised Dimension Reduction for Multi-Label Classification

Buyue Qian, Ian Davidson

265: Assisting Users with Clustering Tasks by Combining Metric Learning and Classification

Sumit Basu, Danyel Fisher, Steven M. Drucker, Hao Lu

955: Transfer Learning in Collaborative Filtering for Sparsity Reduction

Weike Pan, Evan W. Xiang, Nathan N. Liu, Qiang Yang

Search 4

155: Dealing with Infinite Loops, Underestimation, and Overestimation of Depth-First Proof-Number Search

Akihiro Kishimoto

246: Single-Frontier Bidirectional Search

Ariel Felner, Carsten Moldenhauer, Nathan Sturtevant, Jonathan Schaeffer

830: Node Selection Query Languages for Trees

Diego Calvanese, Giuseppe De Giacomo, Maurizio Lenzerini, Moshe Y. Vardi

Algorithms 1

266: Topological Relations between Convex Regions

Sanjiang Li, Weiming Liu

149: Trial-Based Dynamic Programming for Multi-Agent Planning
Feng Wu, Shlomo Zilberstein, Xiaoping Chen

732: A Decentralised Coordination Algorithm for Mobile Sensors
Ruben Stranders, Francesco Maria Delle Fave, Alex Rogers, Nicholas R. Jennings

Mechanism Design 2

780: Accounting Mechanisms for Distributed Work Systems
Sven Seuken, Jie Tang, David C. Parkes

1084: Tolerable Manipulability in Dynamic Assignment without Money
James Zou, Sujit Gujar, David Parkes

39: Truth, Justice, and Cake Cutting
Yiling Chen, John K. Lai, David C. Parkes, Ariel D. Procaccia

SAT

252: A Lower Bound on the Size of Decomposable Negation Normal Form
Knot Pipatsrisawat, Adnan Darwiche

140: A Restriction of Extended Resolution for Clause Learning SAT Solvers
Gilles Audemard, George Katsirelos, Laurent Simon

174: New Worst-Case Upper Bound for #2-SAT and #3-SAT with the Number of Clauses as the Parameter
Junping Zhou, Minghao Yin, Chunguang Zhou

Integrated Intelligence 1: Spatial and Perceptual Processing

6: Using Imagery to Simplify Perceptual Abstraction in Reinforcement Learning Agents
Samuel Wintermute

38: Integrating Constraint Satisfaction and Spatial Reasoning
Unmesh Kurup, Nicholas L. Cassimatis

39: Supporting Wilderness Search and Rescue with Integrated Intelligence: Autonomy and Information at the Right Time and the Right Place
Lanny Lin, Michael Roscheck, Michael A. Goodrich, Bryan S. Morse

AI and the Web 4: Link Analysis

42: Learning to Predict Opinion Share in Social Networks
Masahiro Kimura, Kazumi Saito, Kouzou Ohara, Hiroshi Motoda

108: GTPA: A Generative Model for Online Mentor-Apprentice Networks
Muhammad Aurangzeb Ahmad, David Huffaker, Jing Wang, Jeff Treem, Marshall Scott Poole, Jaideep Srivastava

32: Modeling Dynamic Multi-Topic Discussions in Online Forums
Hao Wu, Jiajun Bu, Chun Chen, Can Wang, Guang Qiu, Lijun Zhang, Jianfeng Shen

IAAI-10 Session: Agents

4:20 - 5:50 pm

6: A Centralized Multi-Agent Negotiation Approach To Collaborative Air Traffic Resource Management Planning

Peter A. Jarvis, Shawn Wolfe, Francis Enomoto, Robert Nado, Maarten Sierhuis

13: A Testbed for Investigating Task Allocation Strategies between Air Traffic Controllers and Automated Agents (*Deployed*)

Nathan Schurr, Richard Good, Amy Alexander, Paul Picciano, Gabriel Ganberg, Michael Therrien, Bettina L. Beard, Jon Holbrook

28: Agent-based Decision Support: A Case-Study on DSL Access Networks

Karsten Bsufka, Rainer Bye, Joël Chinnow, Stephan Schmidt, Leonid Batyuk

Wednesday, July 14

9:00 – 10:00 am

AAAI-10 Invited Talk: Challenges for AI in Computational Sustainability

Carla P. Gomes (Cornell University)

IAAI-10 Session: Sensor Networks & Distributed AI

24: Fast, Accurate, and Practical Identity Inference Using TV Remote Controls

Mariano Phielipp, Magdiel Galan, Richard Lee, Branislav Kveton, Jeffrey Hightower

29: A Wiki with Multiagent Tracking, Modeling, and Coalition Formation

Nobel Khandaker, Leen-Kiat Soh

10:20 - 11:20 am

Social Choice 1

584: Fast Local Search Algorithm for Weighted Feedback Arc Set in Tournaments

Fedor V. Fomin, Daniel Lokshantov, Venkatesh Raman, Saket Saurabh

521: Good Rationalizations of Voting Rules

Edith Elkind, Piotr Faliszewski, Arkadii Slinko

435: Stackelberg Voting Games: Computational Aspects and Paradoxes

Lirong Xia, Vincent Conitzer

Clustering 1

176: Gaussian Mixture Model with Local Consistency

Jialu Liu, Deng Cai, Xiaofei He

538: Multitask Bregman Clustering

Jianwen Zhang, Changshui Zhang

984: Efficient Spectral Feature Selection with Minimum Redundancy

Zheng Zhao, Lei Wang, Huan Liu

Probabilistic Inference 1

486: New Mini-Bucket Partitioning Heuristics for Bounding the Probability of Evidence
Emma Rollon, Rina Dechter

156: Efficient Belief Propagation for Utility Maximization and Repeated Inference
Aniruddh Nath, Pedro Domingos

157: Efficient Lifting for Online Probabilistic Inference
Aniruddh Nath, Pedro Domingos

Machine Learning

789: Smooth Optimization for Effective Multiple Kernel Learning
Zenglin Xu, Rong Jin, Shenghuo Zhu, Michael R. Lyu, Irwin King

1078: Multi-Task Active Learning with Output Constraints
Yi Zhang

817: Grouping Strokes into Shapes in Hand-Drawn Diagrams
Eric J. Peterson, Thomas F. Stahovich, Eric Doi, Christine Alvarado

Answer Set Programming

428: First-Order Indefinability of Answer Set Programs on Finite Structures
Yin Chen, Yan Zhang, Yi Zhou

568: Situation Calculus as Answer Set Programming
Joohyung Lee, Ravi Palla

698: Space Efficient Evaluation of ASP Programs with Bounded Predicate Arities
Thomas Eiter, Wolfgang Faber, Mushthofa Mushthofa

SAT and QBF 1

803: A New Algorithm for Weighted Partial MaxSAT
Carlos Ansótegui, Maria Luisa Bonet, Jordi Levy

445: Exploiting QBF Duality on a Circuit Representation
Alexandra Goultiaeva, Fahiem Bacchus

259: Exploiting Monotonicity in Interval Constraint Propagation
Ignacio Araya, Gilles Trombettoni, Bertrand Neveu

Senior Member Papers

7: Representation Discovery in Sequential Decision Making
Sridhar Mahadevan

8: The Model-Based Approach to Autonomous Behavior: A Personal View
Hector Geffner

9: Progress on Agent Coordination with Cooperative Auctions
Sven Koenig, Pinar Keskinocak, Craig Tovey

AI and the Web 5: Machine Learning

116: Toward an Architecture for Never-Ending Language Learning

Andrew Carlson, Justin Betteridge, Bryan Kisiel, Burr Settles, Estevam R. Hruschka Jr., Tom M. Mitchell

29: Utilizing Context in Generative Bayesian Models for Linked Corpus
Saurabh Kataria, Prasenjit Mitra, Sumit Bhatia

77: PR + RQ = PQ: Transliteration Mining Using Bridge Language
Mitesh M. Khapra, Raghavendra Udupa, A. Kumaran, Pushpak Bhattacharyya

IAAI-10 Invited Talk: A New Paradigm of Geriatric Care Empowered by Applied AI
Majd Alwan (Center for Aging Services Technologies)

11:30 am - 12:30 pm

Social Choice 2

23: Voting Almost Maximizes Social Welfare Despite Limited Communication
Ioannis Caragiannis, Ariel D. Procaccia

177: Cloning in Elections
Edith Elkind, Piotr Faliszewski, Arkadii Slinko

434: Compilation Complexity of Common Voting Rules
Lirong Xia, Vincent Conitzer

Clustering 2

553: Cost-Sensitive Semi-Supervised Support Vector Machine
Yu-Feng Li, James T. Kwok, Zhi-Hua Zhou

310: Adaptive Transfer Learning
Bin Cao, Sinno Jialin Pan, Yu Zhang, Dit-Yan Yeung, Qiang Yang

326: Nonparametric Curve Extraction Based on Ant Colony System
Qing Tan, Qing He, Zhongzhi Shi

MDPs

627: Relational Partially Observable MDPs
Chenggang Wang, Roni Khardon

747: Robust Policy Computation in Reward-Uncertain MDPs Using Nondominated Policies
Kevin Regan, Craig Boutilier

865: Symbolic Dynamic Programming for First-Order POMDPs
Scott Sanner, Kristian Kersting

Relational Learning

845: Structure Learning for Markov Logic Networks with Many Descriptive Attributes
Hassan Khosravi, Oliver Schulte, Tong Man, Xiaoyuan Xu, Bahareh Bina

365: Informed Lifting for Message-Passing
Kristian Kersting, Youssef El Massaoudi, Babak Ahmadi, Fabian Hadji

774: Bayesian Matrix Factorization with Side Information and Dirichlet Process Mixtures

Ian Porteous, Arthur Asuncion, Max Welling

Logical Knowledge Representations

244: Ontologies and Representations of Matter
Ernest Davis

970: Ordered Completion for First-Order Logic Programs on Finite Structures
Vernon Asuncion, Fangzhen Lin, Yan Zhang, Yi Zhou

954: In Defense of Large Qualitative Calculi
Jason Jingshi Li, Jochen Renz

SAT and QBF 2

339: Computing Cost-Optimal Definitely Discriminating Tests
Anika Schumann, Jinbo Huang, Martin Sachenbacher

683: Hydra: Automatically Configuring Algorithms for Portfolio-Based Selection
Lin Xu, Holger H. Hoos, Kevin Leyton-Brown

36: An Efficient Branch-and-Bound Algorithm Based on MaxSAT for the Maximum Clique Problem
Chu-Min Li, Zhe Quan

Multi-Agent Coordination

Challenges in AI: 153: Ad Hoc Autonomous Agent Teams: Collaboration without Pre-Coordination
Peter Stone, Gal A. Kaminka, Sarit Kraus, Jeffrey S. Rosenschein

Nectar: 12: Biologically-Inspired Control for Multi-Agent Self-Adaptive Tasks
Chih-Han Yu, Radhika Nagpal

505: Asynchronous Multi-Robot Patrolling Against Intrusions in Arbitrary Topologies
Nicola Basilico, Nicola Gatti, Federico Villa

AI and the Web 6: Information Extraction

156: Temporal Information Extraction
Xiao Ling, Daniel S. Weld

18: Temporal and Social Context Based Burst Detection from Folksonomies
Junjie Yao, Bin Cui, Yuxin Huang, Xin Jin

69: Fast Algorithms for Top-k Approximate String Matching
Zhenglu Yang, Jianjun Yu, Masaru Kitsuregawa

IAAI-10 Session: Machine Learning I

3: Surveillance of Parimutuel Wagering Integrity Using Expert Systems and Machine Learning
(*Deployed*)
Roy S. Freedman, Isidore Sobkowski

31: Predicting Falls of a Humanoid Robot through Machine Learning
Shivaram Kalyanakrishnan, Ambarish Goswami

1:50 - 2:50 pm

AAAI-10 Invited Talk: Incentive Engineering in the Internet Age

David C. Parkes (Harvard University)

IAAI-10 Session: Knowledge-Based Systems II

44: Learning from Sensors and Past Experience in an Autonomous Oceanographic Probe

Albert Vilamala, Enric Plaza, Josep Lluís Arcos

51: Providing Decision Support for Cosmogenic Isotope Dating

Laura Rassbach, Elizabeth Bradley, Ken Anderson

3:00 - 4:00 pm

Social Choice 3

188: Convergence to Equilibria in Plurality Voting

Reshef Meir, Maria Polukarov, Jeffrey S. Rosenschein, Nicholas R. Jennings

192: Possible Winners When New Candidates Are Added: The Case of Scoring Rules

Yann Chevaleyre, Jérôme Lang, Nicolas Maudet, Jérôme Monnot

631: Lifting Rationality Assumptions in Binary Aggregation

Umberto Grandi, Ulle Endriss

Classification

134: What if the Irresponsible Teachers Are Dominating? A Method of Training on Samples and Clustering on Teachers

Shuo Chen, Jianwen Zhang, Guangyun Chen, Changshui Zhang

351: Learning Discriminative Piecewise Linear Models with Boundary Points

Kun Gai, Changshui Zhang

382: Multi-Task Sparse Discriminant Analysis (MtSDA) with Overlapping Categories

Yahong Han, Fei Wu, Jinzhu Jia, Yueting Zhuang, Bin Yu

Integrated Intelligence 2: Goal Processing, Planning, and Execution

27: Integrating a Closed World Planner with an Open World Robot: A Case Study

Kartik Talamadupula, J. Benton, Paul Schermerhorn, Subbarao Kambhampati, Matthias Scheutz

35: Goal-Driven Autonomy in a Navy Strategy Simulation

Matthew Molineaux, Matthew Klenk, David W. Aha

37: Creating Dynamic Story Plots with Continual Multiagent Planning

Michael Brenner

Reinforcement Learning 1

152: Bayesian Policy Search for Multi-Agent Role Discovery

Aaron Wilson, Alan Fern, Prasad Tadepalli

870: Reinforcement Learning via Practice and Critique Advice

Kshitij Judah, Saikat Roy, Alan Fern, Thomas G. Dietterich

89: Reinforcement Learning via AIXI Approximation
Joel Veness, Kee Siong Ng, Marcus Hutter, David Silver

Ontologies and Description Logics

671: Past and Future of DL-Lite
Alessandro Artale, Roman Kontchakov, Vlad Ryzhikov, Michael Zakharyashev

1054: A New Approach to Knowledge Base Revision in DL-Lite
Zhe Wang, Kewen Wang, Rodney Topor

Nectar: 22: Ontological Reasoning with F-Logic Lite and Its Extensions
Andrea Cali, Georg Gottlob, Michael Kifer, Thomas Lukasiewicz, Andreas Pieris

Global Constraints

288: Propagating Conjunctions of ALLDIFFERENT Constraints
Christian Bessiere, George Katsirelos, Nina Narodytska, Claude-Guy Quimper, Toby Walsh

186: Filtering Bounded Knapsack Constraints in Expected Sublinear Time
Yuri Malitsky, Meinolf Sellmann, Radoslaw Szymanek

965: A Stronger Consistency for Soft Global Constraints in Weighted Constraint Satisfaction
J. H. M. Lee, K. L. Leung

Algorithms 2

Physically Grounded AI: 41: Relative Entropy Policy Search
Jan Peters, Katharina Mülling, Yasemin Altun

AI and Bioinformatics: 11: Fast Conditional Density Estimation for Quantitative Structure-Activity Relationships
Fabian Buchwald, Tobias Girschick, Stefan Kramer, Eibe Frank

888: Soundness Preserving Approximation for TBox Reasoning
Yuan Ren, Jeff Z. Pan, Yuting Zhao

AI and the Web 7: Search & IR

54: Adopting Inference Networks for Online Thread Retrieval
Sumit Bhatia, Prasenjit Mitra

35: Optimal Strategies for Reviewing Search Results
Jeff Huang, Anna Kazeykina

IAAI-10 Session: Virtual Humans

22: Design Privacy with Analogia Graph
Yang Cai, Joseph Laws, Nathaniel Bauernfeind

54: Practical Language Processing for Virtual Humans
Anton Leuski, David Traum

4:20 - 5:20 pm

Social Choice 4

360: Facilitating the Evaluation of Automated Negotiators Using Peer Designed Agents
Raz Lin, Sarit Kraus, Yinon Oshrat, Ya'akov (Kobi) Gal

40: The Genetic Algorithm as a General Diffusion Model for Social Networks
Mayank Lahiri, Manuel Cebrian

491: Facial Age Estimation by Learning from Label Distributions
Xin Geng, Kate Smith-Miles, Zhi-Hua Zhou

Causality and Dependency Learning

125: Dependence Minimizing Regression with Model Selection for Non-Linear Causal Inference under Non-Gaussian Noise
Makoto Yamada, Masashi Sugiyama

426: Learning Spatial-Temporal Varying Graphs with Applications to Climate Data Analysis
Xi Chen, Yan Liu, Han Liu, Jaime G. Carbonell

166: G-Optimal Design with Laplacian Regularization
Chun Chen, Zhengguang Chen, Jiajun Bu, Can Wang, Lijun Zhang, Cheng Zhang

Probabilistic Knowledge Representations

513: Inducing Probability Distributions from Knowledge Bases with (In)dependence Relations
Jianbing Ma, Weiru Liu, Anthony Hunter

834: DTPROBLOG: A Decision-Theoretic Probabilistic Prolog
Guy Van den Broeck, Ingo Thon, Martijn van Otterlo, Luc De Raedt

145: Probabilistic Possible Winner Determination
Yoram Bachrach, Nadja Betzler, Piotr Faliszewski

Reinforcement Learning 2

420: Using Bisimulation for Policy Transfer in MDPs
Pablo Samuel Castro, Doina Precup

195: Multi-Agent Learning with Policy Prediction
Chongjie Zhang, Victor Lesser

440: An Analytic Characterization of Model Minimization in Factored Markov Decision Processes
Wenyuan Guo, Tze-Yun Leong

Logics for Knowledge Representation

609: Knowledge Compilation in the Modal Logic S5
Meghyn Bienvenu, H el ene Fargier, Pierre Marquis

625: Decidable Fragments of First-Order Language under Stable Model Semantics and Circumscription
Heng Zhang, Mingsheng Ying

656: An Inconsistency-Tolerant Approach to Information Merging Based on Proposition Relaxation

Steven Schockaert, Henri Prade

Constraint Satisfaction

38: A First Practical Algorithm for High Levels of Relational Consistency
Shant Karakashian, Robert J. Woodward, Christopher Reeson, Berthe Y. Choueiry, Christian Bessiere

Challenges in AI: 821: Automated Modelling and Solving in Constraint Programming
Barry O'Sullivan

328: A Proof-Producing CSP Solver
Michael Veksler, Ofer Strichman

AI and the Web 8: Recommendation Systems

44: Visual Contextual Advertising: Bringing Textual Advertisements to Images
Yuqiang Chen, Ou Jin, Gui-Rong Xue, Jia Chen, Qiang Yang

93: News Recommendation in Forum-Based Social Media
Jia Wang, Qing Li, Yuanzhu Peter Chen, Jiafen Liu, Chen Zhang, Zhangxi Lin

IAAI-10 Session: Sketching

47: Sketch Worksheets: A Sketch-based Educational Software System
Panrong Yin, Kenneth D. Forbus, Jeffrey Usher, Brad Sageman, Benjamin D. Jee

56: A Sketch Recognition System for Recognizing Free-Hand Course of Action Diagrams
T. Hammond, D. Logsdon, B. Paulson, J. Johnston, J. Peschel, A. Wolin, and P. Tael

6:30 – 9:30 pm

AAAI-10 Poster Demo Reception

Thursday, July 15

9:00 – 10:00 am

AAAI-10 Invited Talk: Constraint Programming and Artificial Intelligence: Challenges, Applications and Opportunities

Barry O'Sullivan (University College Cork)

IAAI-10 Session: Knowledge-Based Systems III

20: Natural Language Aided Visual Query Building for Complex Data Access
Shimei Pan, Michelle Zhou, Keith Houck, Peter Kissa

36: Gaudii: An Automated Graphic Design Expert System
C. Gonzalez-Morcillo, V. J. Martin-Ramirez, D. Vallejo, J. J. Castro-Sanchez, J. Albusac-Jimenez

10:20 - 11:20 am

Modelling Preferences and Utilities

743: Simultaneous Elicitation of Preference Features and Utility
Craig Boutilier, Kevin Regan, Paolo Viappiani

524: Decomposed Utility Functions and Graphical Models for Reasoning about Preferences
Ronen I. Brafman, Yagil Engel

693: The Induction and Transfer of Declarative Bias
Will Bridewell, Ljupco Todorovski

Task Assignment

525: Sequential Incremental-Value Auctions
Xiaoming Zheng, Sven Koenig

617: Increasing Threshold Search for Best-Valued Agents
David Sarne, Simon Shamoun, Eli Rata

1014: Decision-Theoretic Control of Crowd-Sourced Workflows
Peng Dai, Mausam, Daniel S. Weld

Probabilistic Inference 2

927: Integrating Sample-Based Planning and Model-Based Reinforcement Learning
Thomas J. Walsh, Sergiu Goschin, Michael L. Littman

947: SixthSense: Fast and Reliable Recognition of Dead Ends in MDPs
Andrey Kolobov, Mausam, Daniel S. Weld

677: On the Use of Prime Implicates in Conformant Planning
Son Thanh To, Tran Cao Son, Enrico Pontelli

Sentiment and Perspective

975: What Is an Opinion About? Exploring Political Standpoints Using Opinion Scoring Model
Bi Chen, Leilei Zhu, Daniel Kifer, Dongwon Lee

391: CAO: A Fully Automatic Emoticon Analysis System
Michal Ptaszynski, Jacek Maciejewski, Pawel Dybala, Rafal Rzepka, Kenji Araki

914: A Two-Dimensional Topic-Aspect Model for Discovering Multi-Faceted Topics
Michael Paul, Roxana Girju

Voting

249: Bypassing Combinatorial Protections: Polynomial-Time Algorithms for Single-Peaked Electorates
Felix Brandt, Markus Brill, Edith Hemaspaandra, Lane A. Hemaspaandra

146: Coalitional Structure Generation in Skill Games
Yoram Bachrach, Reshef Meir, Kyomin Jung, Pushmeet Kohli

642: Fixing a Tournament
Virginia Vassilevska Williams

Physically Grounded AI 1: Human Behaviours

8: A Layered Approach to People Detection in 3D Range Data
Luciano Spinello, Kai O. Arras, Rudolph Triebel, Roland Siegwart

23: Activity and Gait Recognition with Time-Delay Embeddings
Jordan Frank, Shie Mannor, Doina Precup

42: Community-Guided Learning: Exploiting Mobile Sensor Users to Model Human Behavior
Daniel Peebles, Hong Lu, Nicholas D. Lane, Tanzeem Choudhury, Andrew T. Campbell

AI and the Web 9: Knowledge Acquisition

13: Commonsense Knowledge Mining from the Web
Chi-Hsin Yu, Hsin-His Chen

107: Keyword Extraction and Headline Generation Using Novel Word Features
Songhua Xu, Shaohui Yang, Francis C. M. Lau

88: Sentiment Analysis with Global Topics and Local Dependency
Fangtao Li, Minlie Huang, Xiaoyan Zhu

IAAI-10 Invited Talk: Species of Mind

Vernor Vinge

11:30 am - 12:30 pm

Algorithm and Action Selection

199: Collaborative Expert Portfolio Management
David Stern, Ralf Herbrich, Thore Graepel, Horst Samulowitz, Luca Pulina, Armando Tacchella

680: Learning Causal Models of Relational Domains
Marc Maier, Brian Taylor, Hüseyin Oktay, David Jensen

806: Finite-State Controllers Based on Mealy Machines for Centralized and Decentralized POMDPs
Christopher Amato, Blai Bonet, Shlomo Zilberstein

Manifold Learning

43: Constrained Metric Learning via Distance Gap Maximization
Wei Liu, Xinmei Tian, Dacheng Tao, Jianzhuang Liu

401: Local and Global Regressive Mapping for Manifold Learning with Out-of-Sample Extrapolation
Yi Yang, Feiping Nie, Shiming Xiang, Yueting Zhuang, Wenhua Wang

556: Multilinear Maximum Distance Embedding via L1-norm Optimization
Yang Liu, Yan Liu, Keith C. C. Chan

Planning 1

756: Planning in Dynamic Environments: Extending HTNs with Nonlinear Continuous Effects
Matt Molineaux, Matthew Klenk, David W. Aha

98: Independent Additive Heuristics Reduce Search Multiplicatively
Teresa M. Breyer, Richard E. Korf

183: SAP Speaks PDDL

Jörg Hoffmann, Ingo Weber, Frank Michael Kraft

Natural Language Processing 1

396: Forest-Based Semantic Role Labeling
Hao Xiong, Haitao Mi, Yang Liu, Qun Liu

982: Extracting Ontological Selectional Preferences for Non-Pertainym Adjectives from the Google Corpus
John J. Tanner, Fernando Gomez

1020: Bidirectional Integration of Pipeline Models
Xiaofeng Yu, Wai Lam

Markets and Networks

717: Generalized Task Markets for Human and Machine Computation
Dafna Shahaf, Eric Horvitz

819: Discovering Long Range Properties of Social Networks with Multi-Valued Time-Inhomogeneous Models
Danny Wyatt, Tanzeem Choudhury, Jeff Bilmes

773: Trust Models and Con-Man Agents: From Mathematical to Empirical Analysis
Amirali Salehi-Abari, Tony White

Physically Grounded AI 2: Robot Motion

21: Online Learning of Uneven Terrain for Humanoid Bipedal Walking
Seung-Joon Yi, Byoung-Tak Zhang, Daniel D. Lee

48: Biped Walk Learning through Playback and Corrective Demonstration
Çetin Meriçli, Manuela Veloso

6: Error Aware Monocular Visual Odometry Using Vertical Line Pairs for Small Robots in Urban Areas
Ji Zhang, Dezhen Song

AI and the Web 10: Social Networks

135: Predicting the Importance of Newsfeed Posts and Social Network Friends
Tim Paek, Michael Gamon, Scott Counts, David Maxwell Chickering, Aman Dhesi

129: Extraction and Visualization of Implicit Social Relations on Social Networking Services
Meesun Song, Wonkyu Lee, Junghwan Kim

79: UserRec: A User Recommendation Framework in Social Tagging Systems
Tom Chao Zhou, Hao Ma, Michael R. Lyu, Irwin King

IAAI-10 Session: Machine Learning II

41: AI-Based Software Defect Predictors: Applications and Benefits in a Case Study (*Deployed*)
Ayse Tosun, Ayse Bener, Resat Kale

58: A Machine Learning Approach to the Detection of Fetal Hypoxia during Labor and Delivery
Philip A. Warrick, Emily F. Hamilton, Robert E. Kearney, Doina Precup

1:50 - 2:50 pm

Learning and Belief Revision

148: Interactive Learning Using Manifold Geometry
Eric Eaton, Gary Holness, Daniel McFarlane

898: User-Specific Learning for Recognizing a Singer's Intended Pitch
Andrew Guillory, Sumit Basu, Dan Morris

520: A Belief Revision Framework for Revising Epistemic States with Partial Epistemic States
Jianbing Ma, Weiru Liu, Salem Benferhat

Planning 2

97: A Novel Transition Based Encoding Scheme for Planning as Satisfiability
Ruoyun Huang, Yixin Chen, Weixiong Zhang

287: To Max or Not to Max: Online Learning for Speeding Up Optimal Planning
Carmel Domshlak, Erez Karpas, Shaul Markovitch

622: Probabilistic Plan Recognition Using Off-the-Shelf Classical Planners
Miquel Ramrez, Hector Geffner

Natural Language Processing 2

1035: Automatic Attribution of Quoted Speech in Literary Narrative
David K. Elson, Kathleen R. McKeown

251: Kernelized Sorting for Natural Language Processing
Jagadeesh Jagarlamudi, Seth Juarez, Hal Daum III

306: Clickthrough Log Analysis by Collaborative Ranking
Bin Cao, Dou Shen, Kuansan Wang, Qiang Yang

Equilibria

606: Intentions in Equilibrium
John Grant, Sarit Kraus, Michael Wooldridge

746: A Distributed Algorithm for Optimising over Pure Strategy Nash Equilibria
Archie C. Chapman, Alessandro Farinelli, Enrique Munoz de Cote, Alex Rogers, Nicholas R. Jennings

950: Beyond Equilibrium: Predicting Human Behavior in Normal Form Games
James R. Wright, Kevin Leyton-Brown

Data Mining and Classification

Nectar: 36: Constraint Programming for Data Mining and Machine Learning
Luc De Raedt, Tias Guns, Siegfried Nijssen

Nectar: 48 Active Inference for Collective Classification
Mustafa Bilgic, Lise Getoor

Physically Grounded AI: 57: Unsupervised Learning of Event Classes from Video
Muralikrishna Sridhar, Anthony G. Cohn, David C. Hogg

Physically Grounded AI 3: Behaviour Modelling

7: A Bayesian Nonparametric Approach to Modeling Mobility Patterns
Joshua Joseph, Finale Doshi-Velez, Nicholas Roy

31: A Low False Negative Filter for Detecting Rare Bird Species from Short Video Segments
Using a Probable Observation Data Set-Based EKF Method
Dezhen Song, Yiliang Xu

53: The Boosting Effect of Exploratory Behaviors
Jivko Sinapov, Alexander Stoytchev

AI and the Web 11: Ontology Alignment and Querying

81: How Incomplete Is Your Semantic Web Reasoner?
Giorgos Stoilos, Bernardo Cuenca Grau, Ian Horrocks

106: A Probabilistic-Logical Framework for Ontology Matching
Mathias Niepert, Christian Meilicke, Heiner Stuckenschmidt

75: Towards an Intelligent Code Search Engine
Jinhan Kim, Sanghoon Lee, Seung-won Hwang, Sunghun Kim

3:00 - 4:00 pm

Dealing with Complexity 1

699: Automated Program Debugging via Multiple Predicate Switching
Yongmei Liu, Bing Li

Nectar: 15: Local Search in Histogram Construction
Felix Halim, Panagiotis Karras, Roland H. C. Yap

Nectar: 19: Evolving Compiler Heuristics to Manage Communication and Contention
Matthew E. Taylor, Katherine E. Coons, Behnam Robotmili, Bertrand A. Maher, Doug Burger, Kathryn S. McKinley

Policies

342: High-Quality Policies for the Canadian Traveler's Problem
Patrick Eyerich, Thomas Keller, Malte Helmert

794: epsilon-First Policies for Budget-Limited Multi-Armed Bandits
Long Tran-Thanh, Archie Chapman, Enrique Munoz de Cote, Alex Rogers, Nicholas R. Jennings

796: Myopic Policies for Budgeted Optimization with Constrained Experiments
Javad Azami, Xiaoli Fern, Alan Fern, Elizabeth Burrows, Frank Chaplen, Yanzhen Fan, Hong Liu, Jun Jiao, Rebecca Schaller

Integrated Intelligence 3: Learning about the Environment

25: Instance-Based Online Learning of Deterministic Relational Action Models
Joseph Z. Xu, John E. Laird

42: Integrated Systems for Inducing Spatio-Temporal Process Models
Chunki Park, Will Bridewell, Pat Langley

45: An Integrated Systems Approach to Explanation-Based Conceptual Change
Scott E. Friedman, Kenneth D. Forbus

Planning under Uncertainty

599: PUMA: Planning under Uncertainty with Macro-Actions
Ruijie He, Emma Brunskill, Nicholas Roy

704: Compressing POMDPs Using Locality Preserving Non-Negative Matrix Factorization
Georgios Theodorou, Sridhar Mahadevan

827: Structured Parameter Elicitation
Li Ling Ko, David Hsu, Wee Sun Lee, Sylvie C. W. Ong

Speech and Translation

Nectar: 7: Panlingual Lexical Translation via Probabilistic Inference
Mausam, Stephen Soderland, Oren Etzioni

Nectar: 38: Intelligently Aiding Human-Guided Correction of Speech Recognition
Keith Vertanen, Per Ola Kristensson

944: Design and Implementation of Two-level Synchronization for an Interactive Music Robot
Takuma Otsuka, Kazuhiro Nakadai, Toru Takahashi, Kazunori Komatani, Tetsuya Ogata, Hiroshi G. Okuno

Game Theory 1

972: Private and Third-Party Randomization in Risk-Sensitive Equilibrium Concepts
Mickey Brautbar, Michael Kearns, Umar Syed

876: Coalition Structure Generation Based on Distributed Constraint Optimization
Suguru Ueda, Atsushi Iwasaki, Makoto Yokoo, Marius Calin Silaghi, Katsutoshi Hirayama, Toshihiro Matsui

119: Algorithms for Finding Approximate Formations in Games
Patrick R. Jordan, Michael P. Wellman

Highlights of the Conference Session

4:20 - 5:20 pm

Nectar

29: Enhancing ASP by Functions: Decidable Classes and Implementation Techniques
Francesco Calimeri, Susanna Cozza, Giovambattista Ianni, Nicola Leone

42: Computationally Feasible Automated Mechanism Design: General Approach and Case Studies
Mingyu Guo, Vincent Conitzer

46: Comparing Position Auctions Computationally

David R. M. Thompson, Kevin Leyton-Brown

Dealing with Complexity 2

846: Dominance Testing via Model Checking
Ganesh Ram Santhanam, Samik Basu, Vasant Honavar

86: Two-Player Game Structures for Generalized Planning and Agent Composition
Giuseppe De Giacomo, Paolo Felli, Fabio Patrizi, Sebastian Sardina

454: Representing Preferences among Sets
Gerhard Brewka, Mirosław Truszczynski, Stefan Woltran

Activity Recognition

72: Using Closed Captions as Supervision for Video Activity Recognition
Sonal Gupta, Ray J. Mooney

242: Multi-Agent Plan Recognition: Formalization and Algorithms
Bikramjit Banerjee, Landon Kraemer, Jeremy Lyle

844: Recognizing Multi-Agent Activities from GPS Data
Adam Sadilek, Henry Kautz

Reasoning about Action

Nectar: 5: Automatic Derivation of Finite-State Machines for Behavior Control
Blai Bonet, Héctor Palacios, Héctor Geffner

333: Competing Schedulers
Itai Ashlagi, Moshe Tennenholtz, Aviv Zohar

Integrated Intelligence: 29: Learning Methods to Generate Good Plans: Integrating HTN Learning and Reinforcement Learning
Chad Hogg, Ugur Kuter, Héctor Muñoz-Avila

AI and Bioinformatics

3: A Cross-Entropy Method that Optimizes Partially Decomposable Problems: A New Way to Interpret NMR Spectra
Siamak (Mohsen) Ravanbakhsh, Barnabás Póczos and Russell Greiner

2: A Fast Heuristic Search Algorithm for Finding the Longest Common Subsequence of Multiple Strings
Qingguo Wang, Mian Pan, Yi Shang, Dmitry Korkin

9: Predicting Structural and Functional Sites in Proteins by Searching for Maximum-Weight Cliques
Franco Mascia, Elisa Cilia, Mauro Brunato, Andrea Passerini

Game Theory 2

581: An Approximate Subgame-Perfect Equilibrium Computation Technique for Repeated Games
Andriy Burkov, Brahim Chaib-draa

181: A Temporal Proof System for General Game Playing

Michael Thielscher, Sebastian Voigt

613: Reasoning about Imperfect Information Games in the Epistemic Situation Calculus
Vaishak Belle, Gerhard Lakemeyer