

ICAPS 2019 Schedule overview

	Saturday 13th	
8.30-9.30	Invited talk: Anca Dragan	
9.40-10.40	Classical Planning	Planetary Exploration
10.40-11.00	Coffee break	
11.00-12.30	Probabilistic Planning I	LTL & Temporal Planning
12.30-14.00	Lunch	
14.00-15.30	Search	Reinforcement Learning
15.30-15.50	Coffee break	
15.50-16.30	Invited Industry Session	Hybrid Planning & Algorithm Selection
16.40-17.40		Complexity
	18.00-20.00 Poster & Demo session (drinks & appetizers provided)	

	Sunday 14th	
8.30-9.30	Invited talk: J. Christopher Beck	
9.40-10.40	Multi-Agent Planning	Knowledge Engineering and Execution
10.40-11.00	Coffee break	
11.00-12.30	Optimal & Oversubscription Planning	Scheduling under Uncertainty
12.30-14.00	Lunch	
14.00-15.30	Recognition I	Applications I
15.30-15.50	Coffee break	
15.50-16.30	Recognition II	Robotics I
16.40-17.40	Awards + Community meeting (ends at 18:30)	
	19:00 - Banquet	

	Monday 15th	
8.30-9.30	Invited talk: Derek Long	
9.40-10.40	Probabilistic Planning II	Applications II
10.40-11.00	Coffee break	
11.00-12.30	Learning	Constraint Reasoning and OR
12.30-14.00	Lunch	
14.00-15.30	Path and Motion Planning	Robotics II
15.30-15.50	Coffee break	
15.50-16.30	Path Planning	Transportation Scheduling
16.40-17.40	Applications III	Hybrid Planning

Saturday 13th
8.30-9.30

Invited talk: Anca Dragan						
1a: Classical Planning		60	Short Paper	1b: Planetary Exploration		60
Theoretical Foundations for Structural Symmetries of Lifted PDDL Tasks	Silvan Sievers, Gabriele Röger, Martin Wehrle and Michael Katz			Robust Operations Management on Mars	Michael Saint-Guillain	
Relaxed BDDs: An Admissible Heuristic for Delete-Free Planning Based on a Discrete Relaxation	Margarita Castro, Chiara Piacentini, Andre Augusto Cire and Chris Beck			Temporal Brittleness Analysis of Task Networks for Planetary Rovers	Tiago Vaquero, Steve Chien, Jagriti Agrawal, Wayne Chi and Terrance Huntsberger	
Planning with Global State Constraints and State-Dependent Action Costs	Franc Ivankovic, Patrik Haslum and Dan Gordon			Mars On-site Shared Analytics, Information, and Computing	Joshua Vander Hook, Tiago Stegun Vaquero, Federico Rossi, Martina Troesch, Marc Sanchez-Net, Joshua Schoolcraft, Jean-Pierre de la Croix and Steve Chien	
Advanced Factoring Strategies for Decoupled Search using Linear Programming		Frederik Schmitt, Daniel Gnad and Joerg Hoffmann	Short Paper			
Coffee break						
2a: Probabilistic Planning I		90	Short Paper	2b: LTL & Temporal Planning		90
Robust Bayes-Adaptive Planning under Model Uncertainty	Apoorva Sharma, James Harrison, Matthew Tsao and Marco Pavone			Planning under LTL Environment Specifications	Benjamin Aminof, Giuseppe De Giacomo, Aniello Murano and Sasha Rubin	
POMHDP: Search-based Belief Space Planning using Multiple Heuristics	Sung-Kyun Kim, Oren Salzman and Maxim Likhachev			Learning Interpretable Models Expressed in Linear Temporal Logic	Alberto Camacho and Sheila A. McIlraith	
An Exact Algorithm to make a Trade-off between Cost and Probability in SSPs	Valdinei Freire, Karina Valdivia Delgado and Willy Arthur Silva Reis			Towards a Unified View of AI Planning and Reactive Synthesis	Alberto Camacho, Meghyn Bienvenu and Sheila A. McIlraith	
Discovery of Optimal Solution Horizons in Non-Stationary Markov Decision Processes with Unbounded Rewards	Grigory Neustroev, Mathijs de Weerd and Remco Verzijlbergh			Replanning for Situated Robots	Michael Cashmore, Andrew Coles, Bence Cserna, Erez Karpas, Daniele Magazzeni and Wheeler Ruml	
				Temporal Planning as Refinement-Based Model Checking	Alexander Heinz, Martin Wehrle, Sergiy Bogomolov, Daniele Magazzeni, Marius Greitschus and Andreas Podelski	
Lunch						
3a: Search		90	Short Paper	3b: Reinforcement Learning		90
On the Pathological Search Behavior of Distributed Greedy Best First Search	Ryo Kuroiwa and Alex Fukunaga			Foundations for Restraining Bolts: Reinforcement Learning with LTLf/LDLf restraining specifications	Giuseppe De Giacomo, Marco Favorito, Luca Iocchi and Fabio Patrizi	
Symbolic Planning with Axioms	David Speck, Florian Geißer, Robert Mattmüller and Álvaro Torralba			Deep Policies for Width-Based Planning in Pixel Domains	Miquel Junyent, Anders Jonsson and Vicenç Gómez	
Bridging the Gap Between Abstractions and Critical-Path Heuristics via Hypergraphs	Marcel Steinmetz and Álvaro Torralba			Resource Constrained Deep Reinforcement Learning	Abhinav Bhatia, Pradeep Varakantham and Akshat Kumar	
T-REX: SAT-based Tree Exploration for Efficient and High-Quality HTN Planning	Dominik Schreiber, Tomáš Balyo, Damien Pellier and Humbert Fiorino			Learning Classical Planning Strategies with Policy Gradient	Pawel Gomoluch, Dalal Alrajeh and Alessandra Russo	
Solving Graph Problems in Euclidean Space Using FastMap	Jiaoyang Li, Ariel Felner, Sven Koenig and T. K. Satish Kumar			Size-Independent Neural Transfer for RDDI Planning	Sankalp Garg, Aniket Bajpai and Mausam	
Coffee break						
4a & 5a: Invited Industry Session		110	15.50-16.30	4b: Hybrid Planning & Algorithm Selection		40
Orbital Insight	James Crawford			Mixed Discrete Continuous Non-Linear Planning Through Piecewise Linear Approximation	Elad Denenberg and Amanda Coles	
PARC	Matthew Klenk			Algorithm Selection in Optimization and Application to Angry Birds	Shahaf S. Shperberg, Avinoam Yehezkel and Solomon Eyal Shimony	
United Technologies Research Center	Richa Varma					
Nissan Research Center	Stefan Witwicki		16.40-17.40	5b: Complexity		60
Waymo	Omer Baror			Eliminating Redundant Actions in Partially Ordered Plans -- A Complexity Analysis	Conny Olz and Pascal Bercher	
Lyft	Sammy Omari			On Computational Complexity of Automorphism Groups in Classical Planning	Alexander Shleyfman	
				On the Relation between Star-Topology Decoupling and Petri Net Unfolding	Daniel Gnad and Joerg Hoffmann	
Poster and Demo Session						
18.00-20.00						

Sunday 14th
8.30-9.30

Invited talk: J. Christopher Beck

9.40-10.40

6a: Multi-Agent Planning	60
Best-First Width Search for Multi Agent Privacy-preserving Planning	Alfonso E. Gerevini, Nir Lipovetzky, Francesco Percassi, Alessandro Saetti and Ivan Serina
A Factored Approach to Contingent Multi-Agent Planning	Michal Štolba, Daniel Fišer and Antonín Komenda
Privacy Leakage of Search-based Multi-Agent Planning Algorithms	Shashank Shekhar, Ronen Brafman and Guy Shani

6b: Knowledge Engineering and Execution	60
PLASP 3: Towards Effective ASP Planning	Yannis Dimopoulos, Martin Gebser, Patrick Lühne, Javier Romero and Torsten Schaub
On Compiling Away PDDL3 Qualitative Preferences without Using Automata	Francesco Percassi and Alfonso Emilio Gerevini
Goal Reasoning in a CLIPS-based Executive for Integrated Planning and Execution	Tim Niemueller, Till Hofmann and Gerhard Lakemeyer

Journal Paper

10.40-11.00

Coffee break

11.00-12.30

7a: Optimal & Oversubscription Planning	90
Subset Saturated Cost Partitioning for Optimal Classical Planning	Jendrik Seipp and Malte Helmert
Counterexample-Guided Abstraction Refinement for Pattern Selection in Optimal Classical Planning	Alexander Rovner, Silvan Sievers and Malte Helmert
An Empirical Study of Perfect Potential Heuristics	Augusto B. Corrêa and Florian Pommerening
Lagrangian Decomposition for Optimal Cost Partitioning	Florian Pommerening, Gabriele Röger, Malte Helmert, Hadrien Cambazard, Louis-Martin Rousseau and Domenico Salvagnin
Oversubscription Planning as Classical Planning with Multiple Cost Functions	Michael Katz, Emil Keyder, Florian Pommerening and Dominik Winterer

Short Paper

Short Paper

Best Paper Award

7b: Scheduling under Uncertainty	90
Tabu-Based Large Neighbourhood Search for Time/Sequence-Dependent Scheduling Problems with Time Windows	Lei He, Mathijs de Weerd and Neil Yorke-Smith
Quantifying Degrees of Controllability in Temporal Networks with Uncertainty	Shyan Akmal, Savana Ammons, Maggie Li and Jim Boerkoel
Propagating Piecewise-Linear Weights in Temporal Networks	Luke Hunsberger and Roberto Posenato
Measuring and Optimizing Durability Against Scheduling Disturbances	Joon Lee, Vivaswat Ojha and Jim Boerkoel
Reducing the Computational and Communication Overhead of Robust Agent Rescheduling	Jordan Abrahams, William Lloyd, Grace Diehl, Marina Knittel, Judy Lin, David Chu, Jeremy Frank and Jim Boerkoel

Honorable Mention - Best Student Paper Award

Short Paper

12.30-14.00

Lunch

14.00-15.30

8a: Recognition I	90
Foundations of Human-Aware Planning – A Tale of Three Models	Tathagata Chakraborti
Model Recognition as Planning	Diego Aineto, Sergio Jiménez, Eva Onaindia and Miquel Ramírez
Explicability? Legibility? Predictability? Transparency? Privacy? Security? The Emerging Landscape of Interpretable Robot Behavior	Tathagata Chakraborti, Anagha Kulkarni, Sarath Sreedharan, David Smith and Subbarao Kambhampati
Efficient Heuristic Search for Optimal Environment Redesign	Sarah Keren, Luis Pineda, Avigdor Gal, Erez Karpas and Shlomo Zilberstein
Finding Centroids and Minimum Covering States in Planning	Alberto Pozanco, Yolanda E-Martín, Susana Fernández and Daniel Borrajo

Honorable Mention - Best Dissertation Award

Short Paper

8b: Applications I	90
ZAC: A Zone pAth Construction Approach for Effective Real Time Ride Sharing	Meghna Lowalekar, Pradeep Varakantham and Patrick Jaillet
Reinforcement Learning Based Querying in Camera Networks for Efficient Target Tracking	Anil Sharma, Saket Anand and Sanjit Kaul
Optimizing Parameters for Uncertain Execution and Rescheduling Robustness	Wayne Chi, Jagriti Agrawal and Steve Chien
Front delineation and tracking with multiple underwater vehicles	Andrew Branch, Mar M. Flexas, Brian Claus, Andrew F. Thompson, Yanwu Zhang, Evan B. Clark, Steve Chien, David M. Fratantoni, James C. Kinsey, Brett Hobson, Brian Kieft and Francisco P. Chavez

Best Application Paper

Journal Paper

15.30-15.50

Coffee break

15.50-16.30

9a: Recognition II	40
Landmark-Enhanced Heuristics for Goal Recognition in Incomplete Domain Models	Ramon Fraga Pereira, André Grahl Pereira and Felipe Meneguzzi
Error-Tolerant Anytime Approach for Plan Recognition using a Particle Filter	Jean Massardi, Mathieu Gravel and Éric Beaudry

9b: Robotics I	40
POMDP-based Candy Server: Lessons Learned from a Seven Day Demo	Arthur Claviere, Souradeep Dutta and Sriram Sankaranarayanan
Trajectory Tracking Control for Robotic Vehicles using Counterexample Guided Training of Neural Networks	Marcus Hoerger, Joshua Mun Liang Song, Hanna Kurniawati and Alberto Elfes

16.40-18.30

Awards Session & Community Meeting

19.00-21.00

Banquet

Monday 15th	Invited talk: Derek Long			
8.30-9.30				
9.40-10.40	10a: Probabilistic Planning II 60 Online Risk-Bounded Motion Planning for Autonomous Vehicles in Dynamic Environments Xin Huang, Sungkweon Hong, Andreas Hofmann and Brian Williams A theoretical and algorithmic analysis of configurable MDPs Rui Silva, Gabriele Farina, Francisco S. Melo and Manuela Veloso Stochastic Planning with Lifted Symbolic Trajectory Optimization Hao Cui, Thomas Keller and Roni Khardon		10b: Applications II 60 Towards Automating Crime Prevention through Environmental Design (CPTED) Analysis to Predict Burglary Leanne Monchuk, Simon Parkinson and James Kitchen The Clustered Dial-a-Ride Problem Fabian Feitsch and Sabine Storandt Mixed Integer Programming versus Evolutionary Computation for Optimizing a Hard Real-World Staff Assignment Problem Jannik Peters, Daniel Stephan, Isabel Amon, Hans Gawendowicz, Julius Lischeid, Lennart Salabarría, Jonas Umland, Felix Werner, Martin S. Krejca, Ralf Rothenberger, Timo Kötzing and Tobias Friedrich	
10.40-11.00	Coffee break			
11.00-12.30	11a: Learning 90 Towards Stable Symbol Grounding with Zero-Suppressed State AutoEncoder Masataro Asai and Hiroshi Kajino Unsupervised Grounding of Plannable First-Order Logic Representation from Images Masataro Asai Fast Feature Selection for Linear Value Function Approximation Bahram Behzadian, Soheil Gharatappeh and Marek Petrik Maximum Entropy based Independent Learning in Anonymous Multi-Agent Settings Tanvi Verma, Pradeep Varakantham and Hoong Chuin Lau		11b: Constraint Reasoning and OR 90 Learning Scheduling Models from Event Data Arik Senderovich, Kyle E. C. Booth and J. Christopher Beck Efficiently Exploring Ordering Problems through Conflict-directed Search Jing kai Chen, Cheng Fang, David Wang, Andrew Wang and Brian Williams Analysis of Backward Sequence in Cluster Tools with Processing Time Variations Jun-Ho Lee and Hyun-Jung Kim An MDD-based Lagrangian Approach to the Multi-Commodity Pickup-and-Delivery TSP Margarita Castro, Andre Augusto Cire and Chris Beck A stochastic dual dynamic integer programming for the uncapacitated lot-sizing problem with uncertain demand and costs Franco Quezada, Céline Gicquel and Safia Kedad-Sidhoum	Short Paper Journal Paper
12.30-14.00	Lunch			
14.00-15.30	12a: Path and Motion Planning 90 Implicitly Coordinated Multi-Agent Path Finding under Destination Uncertainty: Success Guarantees and Computational Complexity Bernhard Nebel, Thomas Bolander, Thorsten Engesser and Robert Mattmüller Lazy CBS: Implicit Conflict-Based Search Using Lazy Clause Generation Graeme Gange, Daniel Harabor and Peter J. Stuckey Improving the Combination of JPS and Geometric Containers Yue Hu, Long Qin, Quanjun Yin, Daniel Harabor and Cong Hu Learning Heuristic for Mobile Robot Path Planning Using Deep Neural Network Takeshi Takahashi, He Sun, Dong Tian and Yebin Wang Generalized Lazy Search for Robot Motion Planning: Interleaving Search and Edge Evaluations via Event-based Toggles Aditya Mandalika, Sanjiban Choudhury, Oren Salzman and Siddhartha Srinivasa	Journal Paper Short Paper Best Student Paper Award	12b: Robotics II 90 Open-world Reasoning for Service Robots Yuqian Jiang, Nick Walker, Justin Hart and Peter Stone Intruder Alert! Optimization Models for Solving the Mobile Robot Graph-Clear Problem Michael Morin, Margarita Castro, Kyle Booth and Chris Beck Provable Infinite-Horizon Real-Time Planning for Repetitive Tasks Fahad Islam, Oren Salzman and Maxim Likhachev Speeding Up Search-based Motion Planning via Conservative Heuristics Ishani Chatterjee, Maxim Likhachev, Ashwin Khadke and Manuela Veloso An Hierarchical Approach to Active Semantic Mapping Using Probabilistic Logic and Information Reward POMDP Tiago Veiga, Miguel Silva, Rodrigo Ventura and Pedro U. Lima	Journal Paper Short Paper
15.30-15.50	Coffee break			
15.50-16.30	13a: Path Planning 40 Cutting the Size of Compressed Path Databases With Wildcards and Redundant Symbols Mattia Chiari, Shizhe Zhao, Adi Botea, Alfonso Gerevini, Daniel Harabor, Alessandro Saetti, Matteo Salvetti and Peter J. Stuckey Disjoint Splitting for Conflict-Based Search for Multi-Agent Path Finding Jiaoyang Li, Daniel Harabor, Peter Stuckey, Ariel Felner, Hang Ma and Sven Koenig A Multi-Label A* Algorithm for Multi-Agent Pathfinding Florian Grenouilleau, Willem-Jan van Hoeve and J. N. Hooker	Short Paper Short Paper	13b: Transportation Scheduling 40 Approximate Gradient Descent Convergence Dynamics for Adaptive Control on Heterogeneous Networks Jean Carpentier and Sebastien Blandin Using Bi-Directional Information Exchange to Improve Decentralized Schedule-Driven Traffic Control Hsu-Chieh Hu and Stephen Smith	
16.40-17.40	14a: Applications III 60 Exact Methods for Extended Rotating Workforce Scheduling Problems Lucas Kletzander, Nysret Musliu, Johannes Gärtner, Werner Schafhauser and Thomas Krennwallner Solution Approaches for an Automotive Paint Shop Scheduling Problem Felix Winter, Emir Demirović, Nysret Musliu and Christoph Mrkvicka Personalized Medication and Activity Planning in PDDL+ Fares K. Alaboud and Andrew Coles		14b: Hybrid Planning 60 A Logical Semantics for PDDL+ Vitaliy Batusov and Mikhail Soutchanski Combined time and energy optimal trajectory planning with quadratic drag for mixed discrete-continuous task planning Ayal Taitler, Ilya Ioslovich, Per-Olof Gutman and Erez Karpas Cyber-Physical Planning: Deliberation for Hybrid Systems with a Continuous Numeric State Arthur Bit-Monnot, Luca Pulina and Armando Tacchella	Journal Paper