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

9.40-10.40

1a: Classical Planning	60	
Theoretical Foundations for Structural Symmetries of Lifted PDDL Tasks	Silvan Sievers, Gabriele Röger, Martin Wehrle and Michael Katz	
Relaxed BDDs: An Admissible Heuristic for Delete-Free Planning Based on a Discrete Relaxation	Margarita Castro, Chiara Piacentini, Andre Augusto Cire and Chris Beck	
Planning with Global State Constraints and State-Dependent Action Costs	Franc Ivankovic, Patrik Haslum and Dan Gordon	Short Paper
Advanced Factoring Strategies for Decoupled Search using Linear Programming	Frederik Schmitt, Daniel Gnad and Joerg Hoffmann	Short Paper

1b: Planetary Exploration	60
Robust Operations Management on Mars	Michael Saint-Guillain
Temporal Brittleness Analysis of Task Networks for Planetary Rovers	Tiago Vaquero, Steve Chien, Jagriti Agrawal, Wayne Chi and Terrance Huntsberger
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

10.40-11.00 — Coffee break

11.00-12.30

2a: Probabilistic Planning I	90
Robust Bayes-Adaptive Planning under Model Uncertainty	Apoorva Sharma, James Harrison, Matthew Tsao and Marco Pavone
POMHDP: Search-based Belief Space Planning using Multiple Heuristics	Sung-Kyun Kim, Oren Salzman and Maxim Likhachev
An Exact Algorithm to make a Trade-off between Cost and Probability in SSPs	Valdinei Freire, Karina Valdivia Delgado and Willy Arthur Silva Reis
Discovery of Optimal Solution Horizons in Non-Stationary Markov Decision Processes with Unbounded Rewards	Grigory Neustroev, Mathijs de Weerdt and Remco Verzijlbergh

2b: LTL & Temporal Planning	90	
Planning under LTL Environment Specifications	Benjamin Aminof, Giuseppe De Giacomo, Aniello Murano and Sasha Rubin	
Learning Interpretable Models Expressed in Linear Temporal Logic	Alberto Camacho and Sheila A. McIlraith	
Towards a Unified View of AI Planning and Reactive Synthesis	Alberto Camacho, Meghyn Bienvenu and Sheila A. McIlraith	
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	Short Paper

12.30-14.00 — Lunch

14.00-15.30

3a: Search	90	
On the Pathological Search Behavior of Distributed Greedy Best First Search	Ryo Kuroiwa and Alex Fukunaga	
Symbolic Planning with Axioms	David Speck, Florian Geißer, Robert Mattmüller and Álvaro Torralba	
Bridging the Gap Between Abstractions and Critical-Path Heuristics via Hypergraphs	Marcel Steinmetz and Álvaro Torralba	
T-REX: SAT-based Tree Exploration for Efficient and High-Quality HTN Planning	Dominik Schreiber, Tomáš Balyo, Damien Pellier and Humbert Fiorino	
Solving Graph Problems in Euclidean Space Using FastMap	Jiaoyang Li, Ariel Felner, Sven Koenig and T. K. Satish Kumar	Short Paper

3b: Reinforcement Learning	90	
Foundations for Restraining Bolts: Reinforcement Learning with LTLf/LDLf restraining specifications	Giuseppe De Giacomo, Marco Favorito, Luca Iocchi and Fabio Patrizi	
Deep Policies for Width-Based Planning in Pixel Domains	Miquel Junyent, Anders Jonsson and Vicenç Gómez	
Resource Constrained Deep Reinforcement Learning	Abhinav Bhatia, Pradeep Varakantham and Akshat Kumar	
Learning Classical Planning Strategies with Policy Gradient	Pawel Gomoluch, Dalal Alrajeh and Alessandra Russo	
Size-Independent Neural Transfer for RDDL Planning	Sankalp Garg, Aniket Bajpai and Mausam	Short Paper

15.30-15.50 — Coffee break

15.50-17.40

4a & 5a: Invited Industry Session	110	
Large Scale Analysis of Satellite Imagery and Other Geospatial Data	James Crawford (Orbital Insight)	
Planning for Transportation Influence and Other Problems	Matthew Klenk (PARC)	
TBA	Richa Varma (United Technologies Research Center)	
TBA	Stefan Witwicki (Nissan Research Center)	
Balancing Search and Optimization in a Self-Driving Car	Omer Baror (Waymo)	
High-level decision making and planning using large-scale data	Sammy Omari (Lyft)	

4b: Hybrid Planning & Algorithm Selection (	40	
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	Journal Paper
Algorithm Selection in Optimization and Application to Angry Birds	Shahaf S. Shperberg, Avinoam Yehezkel and Solomon Eyal Shimony	
5b: Complexity (16.40-17.40)	60	
Eliminating Redundant Actions in Partially Ordered Plans -- A Complexity Analysis	Conny Olz and Pascal Bercher	
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	

18.00-20.00 — Poster and Demo Session

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	Journal Paper
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	

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	Short Paper
An Empirical Study of Perfect Potential Heuristics	Augusto B. Corrêa and Florian Pommerening	Short Paper
Lagrangian Decomposition for Optimal Cost Partitioning	Florian Pommerening, Gabriele Röger, Malte Helmert, Hadrien Cambazard, Louis-Martin Rousseau and Domenico Salvagnin	Best Paper Award
Oversubscription Planning as Classical Planning with Multiple Cost Functions	Michael Katz, Emil Keyder, Florian Pommerening and Dominik Winterer	

7b: Scheduling under Uncertainty	90	
Tabu-Based Large Neighbourhood Search for Time/Sequence-Dependent Scheduling Problems with Time Windows	Lei He, Mathijs de Weerdt and Neil Yorke-Smith	
Quantifying Degrees of Controllability in Temporal Networks with Uncertainty	Shyan Akmal, Savana Ammons, Maggie Li and Jim Boerkoel	Honorable Mention - Best Student Paper Award
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	Short Paper
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	

12.30-14.00 — Lunch

14.00-15.30

8a: Recognition, Goal and Model Reasoning	90	
Foundations of Human-Aware Planning – A Tale of Three Models	Tathagata Chakraborti	Honorable Mention - Best Dissertation Award
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	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	UTRC Best Application Paper
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	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	Marcus Hoerger, Joshua Mun Liang Song, Hanna Kurniawati and Alberto Elfes	
Trajectory Tracking Control for Robotic Vehicles using Counterexample Guided Training of Neural Networks	Arthur Claviere, Souradeep Dutta and Sriram Sankaranarayanan	

16.40-18.30 — Awards Session & Community Meeting

19.00-21.00 — Banquet

Monday 15th

8.30-9.30 — Invited talk: Derek Long

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 Salabarria, 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	Jingkai 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	Short Paper
An MDD-based Lagrangian Approach to the Multi-Commodity Pickup-and-Delivery TSP	Margarita Castro, Andre Augusto Cire and Chris Beck	Journal Paper
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	

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	Journal Paper
Lazy CBS: Implict 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	Short Paper
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	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	Journal Paper
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	Short Paper
An Hierarchical Approach to Active Semantic Mapping Using Probabilistic Logic and Information Reward POMDP	Tiago Veiga, Miguel Silva, Rodrigo Ventura and Pedro U. Lima	

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	Short Paper
A Multi-Label A* Algorithm for Multi-Agent Pathfinding	Florian Grenouilleau, Willem-Jan van Hoeve and J. N. Hooker	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
Mixed Discrete Continuous Non-Linear Planning Through Piecewise Linear Approximation	Elad Denenberg and Amanda Coles
Cyber-Physical Planning: Deliberation for Hybrid Systems with a Continuous Numeric State	Arthur Bit-Monnot, Luca Pulina and Armando Tacchella