



Conference Booklet

Random Information

For a medical emergency, dial 911 on any telephone (mobile or landline).

The standard US electricity supply is 120 volts at 60 Hz.

The conference website is icaps14.icaps-conference.org.

The conference hotel is the Sheraton Portsmouth Harborside Hotel, 250 Market St, +1-603-431-2300.

In case of an urgent conference matter, contact:

the ICAPS registration desk at the Sheraton (see hours in the detailed schedule)

General Co-Chair Wheeler Ruml: 603-767-3048 (mobile)

General Co-Chair Minh Do: 650-714-3925 (mobile)

Local Arrangements Chair Scott Kiesel: 603-530-2502 (mobile)

For getting around, we recommend Google Maps (maps.google.com).

For weather, we recommend the US National Weather Service (www.weather.gov). The postal ZIP code of Portsmouth is 03801.

For restaurant reviews, we recommend Yelp (www.yelp.com).

Note that Portsmouth NH is also very near Kittery ME, New Castle NH, and Rye NH.

The Sheraton has free WiFi throughout the hotel. Please respect other users and avoid using a lot of bandwidth.

ICAPS-14 Proceedings

The ICAPS-14 proceedings are already on-line at:

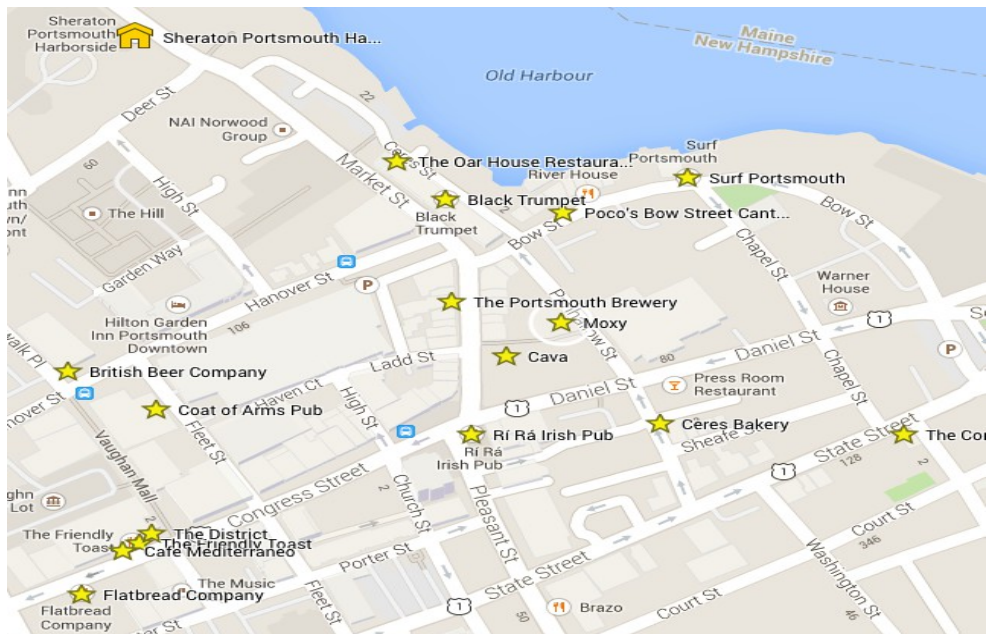
www.aaai.org/Library/ICAPS/icaps14contents.php.

Hardcopies will be available for purchase in August.

To download an eBook containing the entire proceedings, conference attendees can:

1. Go to www.aaai.org/Press/Proceedings/icaps14.php
2. Add to cart
3. Enter coupon code *1400716758*
4. Recalculate
5. Then check out.
- 6.

A link will be shown and emailed to you. The coupon code expires July 5, 2014.



Restaurants

Black Trumpet Bistro - \$\$\$

Family-owned bistro and wine bar in the heart of Portsmouth's historic old port

British Beer Company - \$\$

Authentic British meat pies, burgers, butties and baps

Cafe Mediterraneo - \$\$

The Italian bistro has been described as bringing the flavor of the North End to Portsmouth

Cava Tapas & Wine Bar - \$\$\$

Wine bar using the freshest seasonal products available to create innovative menus

Ceres Bakery - \$

The delicious lunches are generous, reasonably-priced, and change daily

Coat of Arms Pub - \$\$

Come for the beer stay for the food

Flatbread Company - \$\$

Delicious wood fire pizza

Moxy - \$\$

Modern american tapas... a fun and casual two story space

Poco's Bow Street Cantina - \$\$

Creative menu that takes Mexican cuisine and blends it with Seacoast favorites (best margaritas in town)

Rí Rá Irish Pub - \$\$

Irish Pub... built entirely from authentic pub salvage sourced and meticulously restored in Ireland...

Surf Portsmouth - \$\$\$

Surf has set the standard in New Hampshire for fresh, exquisitely prepared seafood

The Common Man Portsmouth - \$\$

American fare with New England flair

The District - \$\$

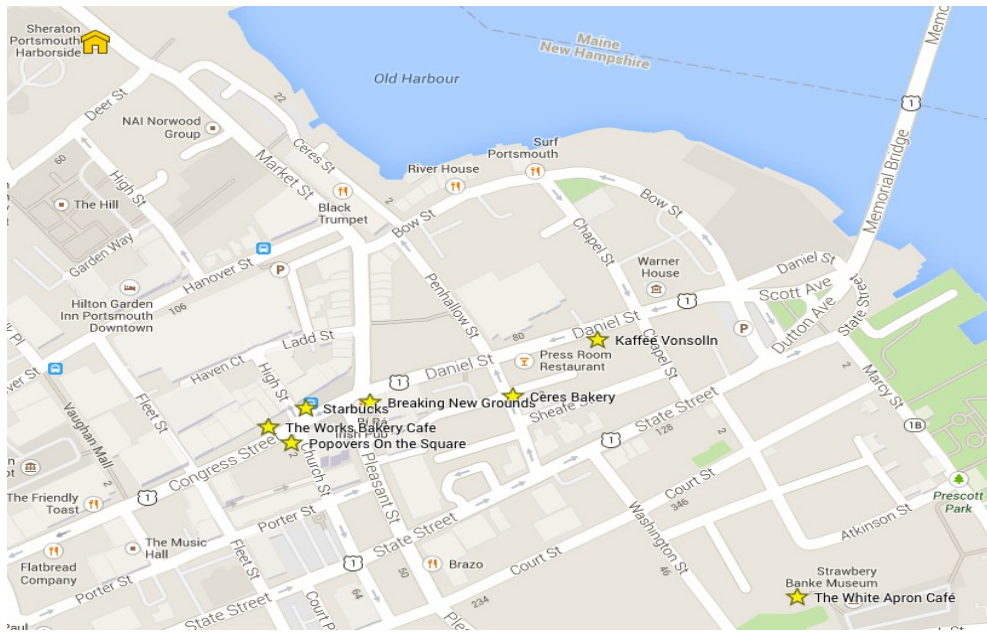
We take great care to offer eclectic fare. Fresh seafood, fine cuts of steak, vegetarian delights, and a gluten-free menu

The Friendly Toast - \$\$

Quite casual but good food

The Portsmouth Brewery - \$\$

Great food and outstanding handcrafted beers in a friendly, lively atmosphere



Coffee & Bakeries

Breaking New Grounds - \$

Great quality beans, in-house roasting process, passion behind coffee and unique experience of being in the heart of downtown

Ceres Bakery - \$

The delicious lunches are generous, reasonably-priced, and change daily

Kaffee VonSolln - \$

European style coffee shop

Popovers On The Square - \$\$

European philosophy of fresh, seasonal food; outstanding coffees and wines; exceptional pastries and desserts; and, of course, a relaxing ambiance

Starbucks - \$\$

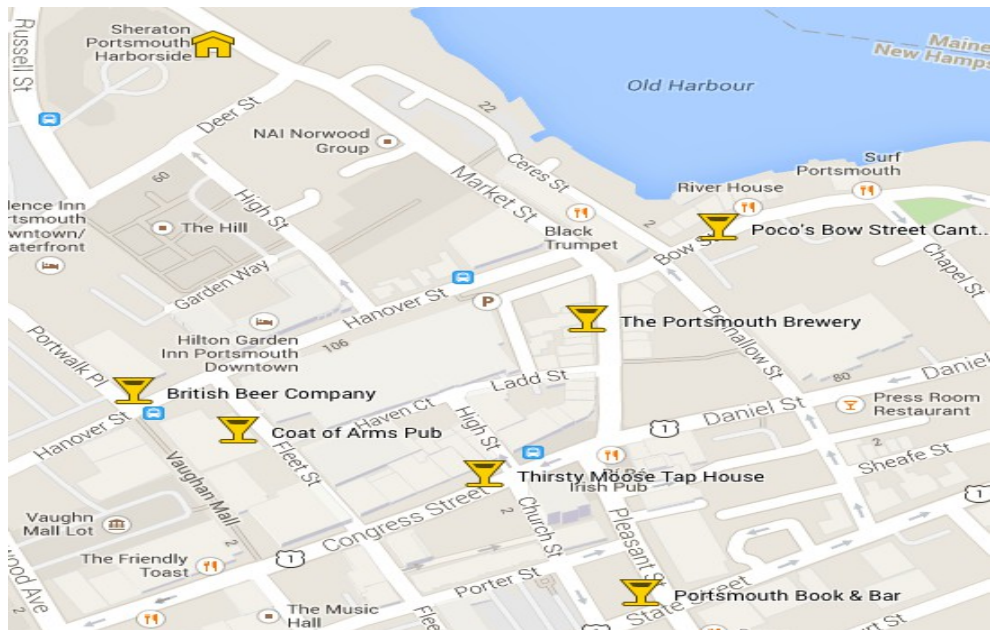
A consistent cup of coffee

The White Apron Cafe - \$

Fresh selection of pastries, sandwiches, paninis, quiches, salads, beverages, smoothies, gourmet coffee, cappuccinos, espressos

The Works Bakery Cafe - \$

A bakery and cafe with coffee, bagels, and sandwiches



Bars & Taverns

British Beer Company - \$\$

Authentic British meat pies, burgers, butties and baps

Coat of Arms Pub - \$\$

Come for the beer stay for the food

Poco's Bow Street Cantina - \$\$

Creative menu that takes Mexican cuisine and blends it with Seacoast favorites (known for the best margaritas in town)

Portsmouth Book & Bar - \$\$

An old fashioned browser's bookshop offering espresso, craft beers, and lovely small plates

The Porstmouth Brewery - \$\$

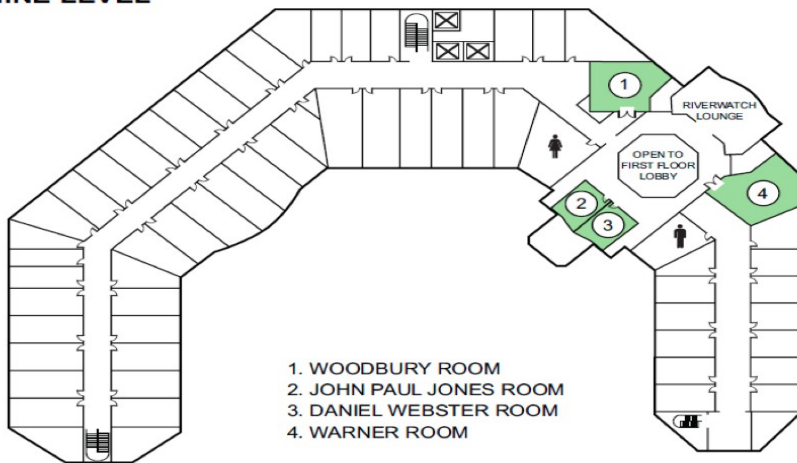
Great food and outstanding handcrafted beers in a friendly, lively atmosphere

Thirsty Moose Tap House - \$\$

116 beers on tap... Oh you're still reading? American bar and grill style cuisine

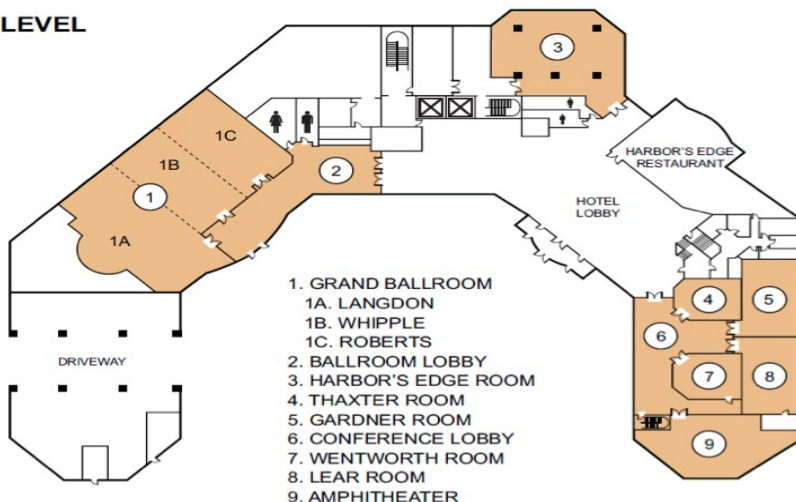
Sheraton Portsmouth Harborside Upper Level

MEZZANINE LEVEL



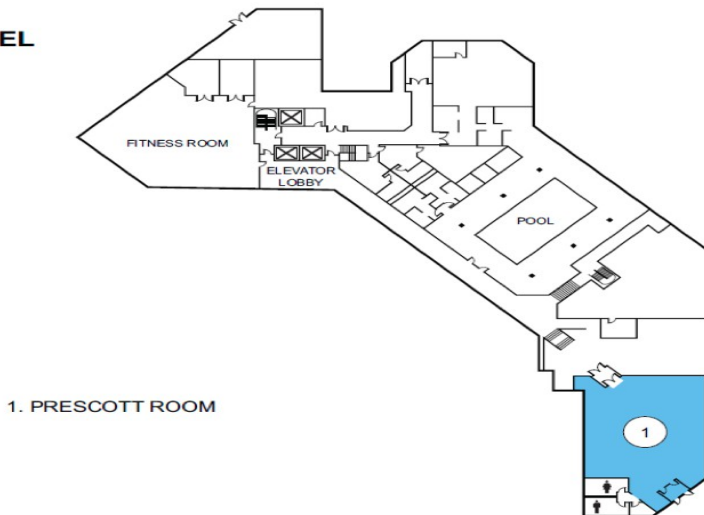
Sheraton Portsmouth Harborside Main Level

LOBBY LEVEL



Sheraton Portsmouth Harborside Lower Level

LOWER LEVEL



Sat, June 21 2014

08:30-17:00	Registration
09:00-10:30	Doctoral Consortium
10:30-11:00	Coffee Break
11:00-12:30	Doctoral Consortium
12:30-14:00	Lunch Break
14:00-15:30	Doctoral Consortium
15:30-16:00	Coffee Break
16:00-17:30	Doctoral Consortium
Evening	Doctoral Consortium Dinner

Sun, June 22 2014

08:00-17:00	Registration				
	Workshops				Tutorials
08:30-10:00	SPARK	DMAP	PlanRob	HSDIP	
10:00-10:30	Coffee Break				
10:30-12:00	SPARK	DMAP	PlanRob	HSDIP	Scheduling Problems: Case Studies and Solution Techniques (Nysret Musliu)
12:00-13:45	Lunch Break				

13:45-15:15	SPARK	DMAP	PlanRob	HSDIP	Introduction to Planning Domain Modeling in RDDL (Scott Sanner)
15:15-15:45	Coffee Break				
15:45-17:15	SPARK	DMAP	PlanRob	HSDIP	Decision Diagrams in Automated Planning and Scheduling (Scott Sanner)

Tutorials

Scheduling Problems: Case Studies and Solution Techniques

Nysret Musliu

Scheduling problems arise in many applications, including transportation, education, health care, space operations, manufacturing, etc. Due to the complexity of such problems, human experts usually cannot provide good solutions in a reasonable time. Hence, automated scheduling has become a dynamic area of research in Artificial Intelligence and Operations Research.

In this tutorial, we will first give an introduction to scheduling problems and discuss their classification. Several case studies from various application domains (e.g., employee scheduling, school timetabling, and sport scheduling) will be explained in detail. In the second part of this tutorial, we will discuss the state-of-the-art techniques that have been proposed to solve these problems. These methods include complete algorithms (CP, SAT, etc.), metaheuristic techniques, and hybrid algorithms. Finally, we will demonstrate the application of two scheduling systems on real-life problems and discuss current challenges in these areas.

Introduction to Planning Domain Modeling in RDDL

Scott Sanner

RDDL is the Relational Dynamic Influence Diagram Language, the domain modeling language used in the ICAPS 2011 and 2014 International Probabilistic Planning Competitions. RDDL has been developed to compactly model real-world planning problems that use boolean, multi-valued, integer and continuous variables, unrestricted concurrency, non-fluents, probabilistic independence among complex effects (important for exogenous events), aggregation operators in addition to quantifiers, and partial observability. While RDDL addresses some of the probabilistic modeling limitations of PPDDL, it's deterministic subset also addresses some modeling limitations of PDDL (e.g., models needing nonlinear difference equations or unrestricted concurrency). This tutorial provides a general introduction to RDDL and its extension in 2014 to RDDL2, it's semantics, and a number of detailed examples like elevator and traffic control to demonstrate it's expressive power. It also provides a brief introduction to the rddlsim software that permits the simulation, evaluation, and visualization of planners and planning domains.

Decision Diagrams in Automated Planning and Scheduling

Scott Sanner

Decision diagrams have proved to be a useful data structure for model checking, temporal verification, graphical model inference, and factored planning (factored MDPs and POMDPs among many applications). This tutorial will cover the foundations of binary and algebraic decision diagrams (BDDs & ADDs) -- their properties, their algorithms, their use in various automated planning settings (including a discussion of when other techniques are preferable to decision diagrams), and tricks of the trade (variable orderings, approximation, and application-specific operations) that help one achieve maximal efficiency in practice. Beyond BDDs and ADDs, the tutorial will also cover a variety of less well-known but important decision diagrams and their applications: Zero-suppressed DDs (ZDDs) for set representation, Affine ADDs (AADDs) for arithmetic function representation, and recent extensions of decision diagrams to continuous variables (XADDs) enabling novel exact solutions to a variety of continuous planning problems. While focusing on the theory of decision diagrams, the tutorial will constantly relate the theory to practical applications in automated planning and scheduling.

Scheduling and Planning Applications woRKshop (SPARK)

	Session 1: Social, Business, and Diagnostic Processes
08:30-09:00	Daniele Magazzeni, Fabio Mercorio, Balbir Barn, Tony Clark, Franco Raimondi and Vinay Kulkarni <i>Temporal Planning for Business Process Optimisation</i>
09:00-09:30	Anton Riabov, Shirin Sohrabi and Octavian Udrea <i>New Algorithms for The Top-K Planning Problem</i>
09:30-10:00	Mary Ellen Foster and Ronald Petrick <i>Planning for Social Interaction with Sensor Uncertainty</i>
10:00-10:30	Coffee Break
	Session 2: Transportation & Logistics

10:30-11:00	Eduardo Lalla-Ruiz, Christopher Expósito-Izquierdo, Belén Melian-Batista and J. Marcos Moreno-Vega <i>Optimization Approach for the Management of Transshipment Operations in Maritime Container Terminals</i>
11:00-11:30	Falilat Jimoh, Lukas Chrpá and Lee McCluskey <i>The Application of Planning to Urban Traffic Control</i>
11:30-12:00	Lydia Manikonda, Tathagata Chakraborti, Sushovan De, Kartik Talamadupula and Subbarao Kambhampati <i>AI-MIX: Using Automated Planning to Steer Human Workers Towards Better Crowdsourced Plans</i>
12:00-13:45	Lunch Break
	Session 3: Invited Talk + Aerospace Applications (1st Part)
13:45-14:45	Keynote: Steve Chien
14:45-15:15	Mark Giuliano <i>A Case Study Using Hubble Space Telescope Long Range Planning</i>

15:15-15:45	Coffee Break
	Session 4: Aerospace Applications (2nd Part)
14:45-16:15	David Smith, Javier Barreiro and Minh Do <i>Intelligent UAS Sense-and-Avoid Utilizing Global Constraints</i>
16:15-16:45	Kristen Brent Venable, Bob Morris, Matthew Johnson, Aliyeh Mousavi and Nikunj Oza <i>A machine learning surrogate for rotorcraft noise optimization</i>
16:45-17:15	Concluding Remarks

Invited Talk: Steve Chien

Activity-based Scheduling of Science Campaigns for the Rosetta Orbiter: An Early Report on Operations

Rosetta is an ESA-led cornerstone mission that will reach the comet 67P/Churyumov-Gerasimenko in August 2014 and will escort the comet for a 1.5 year nominal mission offering the most detailed study of a comet ever undertaken by humankind. The Rosetta orbiter has 11 scientific instruments (4 remote sensing) and the

Philae lander to make complementary measurements of the comet nucleus, coma (gas and dust), and surrounding environment. Constructing the science plan for the Rosetta mission is a complex, challenging problem that requires careful consideration of the mission phase, comet state, instrument state, spacecraft location and viewing geometry, and resources such as power and data volume. The ASPEN scheduler is being used for Skeleton, Long Term, and early Medium term science planning for the Rosetta Orbiter. In this talk I will describe some of the challenging aspects of Rosetta science planning from an automated scheduling perspective, including: geometric constraints, diverse constraints, large search space, complex objective functions, and a tremendous amount of human expertise to leverage. I will highlight these topics using examples from development of pre-lander-deployment plans developed using ASPEN.

Steve Chien is the Head of the Artificial Intelligence Group and Senior Research Scientist in the Mission Planning and Execution Section at the Jet Propulsion Laboratory, California Institute of Technology where he leads efforts in automated planning and scheduling for space exploration. He is a four-time honoree in the NASA Software of the Year Competition and has led the deployment of onboard autonomy software to several missions including Earth Observing One and the Mars Exploration Rovers.

Distributed and Multi-Agent Planning (DMAP)

08:20-08:30	Welcome
	Oral Presentations
08:30-09:00	Ronen Brafman and Uri Zoran <i>Distributed Heuristic Forward Search with Interacting Actions</i>
09:00-09:30	Jan Tozicka, Jan Jakubuv, Karel Durkota and Antonin Komenda <i>Multiagent Planning by Iterative Negotiation over Distributed Planning Graphs</i>
09:30-10:00	Matthew Crosby and Ron Petrick <i>Temporal Multiagent Planning with Concurrent Action Constraints</i>
10:00-10:30	Coffee Break

10:30-11:00	Andrea Bonisoli, Alfonso Gerevini, Alessandro Saetti and Ivan Serina <i>A Privacy-preserving Model for the Multi-agent Propositional Planning Problem</i>
11:00-11:30	Yu Zhang and Subbarao Kambhampati <i>A Formal Analysis of Required Cooperation in Multi-agent Planning</i>
11:30-12:00	Shamin Kinathil, Scott Sanner and Nicolas Della Penna <i>Closed-form Solutions to a Subclass of Continuous Stochastic Games via Symbolic Dynamic Programming</i>
12:00-13:45	Lunch Break
13:45-14:15	Aris Valtazanos and Mark Steedman <i>Improving Uncoordinated Collaboration in Partially Observable Domains with Imperfect Simultaneous Action Communication</i>
14:15-14:45	Nerea Luis and Daniel Borrajo <i>Plan Merging by Reuse for Multi-Agent Planning</i>

14:45-15:15	Filippos Kominis and Hector Geffner <i>Beliefs in Multiagent Planning: From One Agent to Many</i>
15:15-15:45	Coffee Break
15:45-16:15	Jesús Virseda Jerez, Susana Fernández and Daniel Borrajo <i>Multi-Agent Planning with Agent Preferences</i>
16:15-16:45	Alejandro Torreño, Eva Onaindía and Óscar Sapena <i>Integrating individual preferences in multi-agent planning</i>
16:45-17:15	Open Discussion

Planning and Robotics (PlanRob Day 1)

08:45-09:00	PlanRob'14 WS Introduction
09:00-10:00	Keynote: Brian Williams
10:00-10:30	Coffee Break
	Session: Planning and Execution for Robots
10:30-10:55	Scott Kiesel and Wheeler Ruml <i>Planning Under Temporal Uncertainty Using Hindsight Optimization</i>
10:55-11:20	Filip Dvorak, Arthur Bit-Monnot, Félix Ingrand and Malik Ghallab <i>A Flexible ANML Actor and Planner in Robotics</i>
11:20-11:45	Raphaël Lallement, Lavindra de Silva and Rachid Alami <i>HATP: An HTN Planner for Robotics</i>

11:45-12:10	Stefano Borgo, Amedeo Cesta, Andrea Orlandini, Riccardo Rasconi, Marco Suriano and Alessandro Umbrico <i>A Cooperative Model-based Control Agent for a Reconfigurable Manufacturing Plant</i>
12:10-12:35	Enrico Scala <i>Continual Planning via Reconfiguration and Goal Revision</i>
12:35-13:30	Lunch Break
	Session: Multi-Robot Planning
13:30-13:55	Guillaume Infantes, Charles Lesire and Cédric Pralet <i>Multi-Robot Planning and Execution for an Exploration Mission: a Case Study</i>
13:55-14:20	Tiago Stegun Vaquero, Goldie Nejat and Chris Beck <i>Planning and Scheduling Single and Multi-Person Activities in Retirement Home Settings for a Group of Robots</i>

14:20-14:45	Christopher Amato, George Konidaris, Gabriel Cruz, Christopher Maynor, Jonathan How and Leslie Kaelbling <i>Planning for Decentralized Control of Multiple Robots Under Uncertainty</i>
14:45-15:10	Andrew Kimmel and Kostas Bekris <i>Decentralized Adaptive Path Selection for Multi-Agent Conflict Minimization</i>
15:10-15:40	Coffee Break
15:40-16:05	Luigi Palmieri and Kai Oliver Arras <i>Efficient and Smooth RRT Motion Planning Using a Novel Extend Function for Wheeled Mobile Robots</i>
	Session: Knowledge Reasoning and Representation in Planning
16:05-16:30	Ronen Brafman, Guy Shani and Solomon Shimony <i>Performance Level Profiles</i>

16:30-16:55	Mark Roberts, Swaroop Vattam, Ronald Alford, Bryan Auslander, Justin Karneeb, Thomas Apker, Matthew Molineaux, Mark Wilson, James McMahon and David Aha <i>Iterative Goal Refinement for Robotics</i>
16:55-17:20	Iman Awaad, Gerhard Kraetzschmar and Joachim Hertzberg <i>Challenges in Finding Ways to get the Job Done</i>
17:20-17:45	Shiqi Zhang, Mohan Sridharan, Michael Gelfond and Jeremy Wyatt <i>Integrating Declarative Programming and Probabilistic Graphical Models for Knowledge Representation and Reasoning in Robotics</i>
17:45-18:10	Markus Schwenk, Tiago Stegun Vaquero, Goldie Nejat and Kai Oliver Arras <i>Planning a Robot's Search for Multiple Residents in a Retirement Home Environment</i>
18:10-18:35	Sara Bernardini, Maria Fox, Derek Long <i>Planning the Behaviour of Low-Cost Quadcopters for Surveillance Missions</i>
	PlanRob Social Dinner

Heuristics and Search for Domain-independent Planning (HSDIP)

08:30-08:50	Opening Remarks
	Session 1: Abstraction heuristics
08:50-09:15	Robert Holte <i>Korf's Conjecture and the Future of Abstraction-based Heuristics</i>
09:15-09:35	Jörg Hoffmann, Peter Kissmann and Alvaro Torralba <i>"Distance"? Who Cares? Tailoring Merge-and-Shrink Heuristics to Detect Unsolvability</i>
09:35-09:55	Silvan Sievers, Martin Wehrle and Malte Helmert <i>Generalized Label Reduction for Merge-and-Shrink Heuristics</i>
10:00-10:30	Coffee Break
	Session 2: Generalizing heuristics beyond STRIPS

10:30-10:50	Vitaly Mirkis and Carmel Domshlak <i>Landmarks in Oversubscription Planning</i>
10:50-11:10	Gabriele Röger, Florian Pommerening and Malte Helmert <i>Optimal Planning in the Presence of Conditional Effects: Extending LM-Cut with Context Splitting</i>
11:10-11:35	Thorsten Rauber, Denis Müller, Peter Kissmann and Jörg Hoffmann <i>Delete Relaxation and Traps in General Two-Player Zero-Sum Games</i>
11:35-11:55	Michal Krajnansky, Jörg Hoffmann, Olivier Buffet and Alan Fern <i>Learning Pruning Rules for Heuristic Search Planning</i>
12:00-13:45	Lunch Break
	Session 3: Search algorithms
13:45-14:05	Fan Xie, Martin Mueller and Robert Holte <i>Adding Local Exploration to Greedy Best-First Search in Satisficing Planning</i>

14:05-14:25	Fan Xie, Martin Mueller, Robert Holte and Tatsuya Imai <i>Type-based Exploration with Multiple Search Queues for Satisficing Planning</i>
14:25-14:50	Vitali Sepetnitsky, Ariel Felner and Roni Stern <i>To reopen or not to reopen in the context of Weighted A*? Classifications of different trends</i>
14:50-15:10	Nir Lipovetzky and Hector Geffner <i>Width-based Algorithms for Classical Planning: New Results</i>
15:15-15:45	Coffee Break
	Session 4: Delete Relaxation
15:45-16:10	Jörg Hoffmann, Marcel Steinmetz and Patrik Haslum <i>What Does it Take to Render $h^+(P_i^C)$ Perfect?</i>
16:10-16:35	Michael Katz and Jörg Hoffmann <i>Pushing the Limits of Partial Delete Relaxation: Red-Black DAG Heuristics</i>

16:35-16:55	Tatsuya Imai and Alex Fukunaga <i>A Practical, Integer-Linear Programming Model for the Delete-Relaxation in Cost-Optimal Planning</i>
16:55-17:15	Closing Remarks

Mon, June 23 2014

08:00-17:00	Registration					
	Workshops			Tutorials		
8:30 - 10:00	M P P U	M O C H AP	K E PS	P l a n R o b	From Single-Agent Pathfinding to Multi- Agent Pathfinding and in Between (Ariel Felner and Nathan Sturtevant)	Constraint-Based Temporal Reasoning (Roman Barták and Robert A. Morris and K. Brent Venable)
10:00 - 10:20	Coffee Break					

10:20 - 11:50	M P P U	M O C H A P	K E P S	P l a n R o b	From Single-Agent Pathfinding to Multi-Agent Pathfinding and in Between (Ariel Felner and Nathan Sturtevant)	Constraint-Based Temporal Reasoning (Roman Barták and Robert A. Morris and K. Brent Venable)
11:50 - 13:40	Lunch Break					
13:40 - 15:10	M P P U	M O C H A P	K E P S	C O P L A S	Task and Motion Planning for Robots in the Real World (Siddharth Srivastava and Sachin Patil)	PSVN: A Hands-On Tutorial (Rob Holte)
15:10 - 15:30	Coffee Break					

15:30 - 17:00	M P P U	M O C H AP	K EP S	C OP L A S	Task and Motion Planning for Robots in the Real World (Siddharth Srivastava and Sachin Patil)	PSVN: A Hands-On Tutorial (Rob Holte)
17:00 - 19:30	Opening Reception Departure for Opening Reception at 17:05 in front of the Sheraton (see map and information after workshop schedules)					

Tutorials

From Single-Agent Pathfinding to Multi-Agent Pathfinding and in Between

Ariel Felner and Nathan Sturtevant

The aim of the tutorial is to cover some of the heuristic search work that has been done outside of the planning community but that might very relevant to planning. We aim to focus on the different characteristics and search methods that are used for polynomial domains which are usually described explicitly and those for exponential domains which are described implicitly. In particular we will discuss single-agent pathfinding domains (e.g., GPS, game maps) where the state spaces are polynomial and related search algorithms and heuristics. We will then focus on exponential domains (e.g., Rubik's cube) and related techniques. In addition we will cover some work that has been done to combine these two aspects such as large-scale search (on disk) and the multi-agent pathfinding problem.

Constraint-Based Temporal Reasoning

Roman Barták and Robert A. Morris and K. Brent Venable

The representation of temporal information, and reasoning about time, are important in artificial intelligence. Reasoning about time plays a critical role in building automated planning and scheduling systems, where causal and temporal relations are the

most critical concepts. The tutorial introduces to core concepts of constraint-based temporal reasoning. In particular, it will describe the classical temporal models, both qualitative and quantitative, and relevant reasoning (consistency) techniques, and it will cover extensions of these models towards representing preferences and uncertainty. Example applications will also be listed. The tutorial is targeted especially to PhD students and researchers that need to employ temporal reasoning in their systems. No specific prior knowledge is required beyond the basic understanding of logic and algorithms.

Task and Motion Planning for Robots in the Real World

Siddharth Srivastava and Sachin Patil

In order to autonomously perform high level tasks such as laying a table for dinner, robots need to carry out high level planning based on logical descriptions like PDDL as well as lower level motion planning in a high dimensional continuous space. While each of these levels of planning have witnessed significant research and have progressed immensely as independent fields, unifying them into a solution approach has turned out to be a significant theoretical challenge. This is because in the real world, even the so called high level actions, like picking up an object, have geometric preconditions over continuous arguments and cannot be expressed accurately as discrete actions. Furthermore, reliably executing such actions would require reasoning about the world from real-valued sensor measurements.

This two-part tutorial will cover the essential concepts from both fields and provide a comprehensive survey of recently proposed approaches for task and motion planning in robotics. One of the key objectives will be to break down the barriers preventing experts in each layer of planning from contributing using the techniques from the other. The first part of the tutorial will be focused on overall approaches for combining task planning and motion planning; the second part will be focused on aspects involving partial observability and stochastic actions.

PSVN: A Hands-On Tutorial

Rob Holte

This tutorial is a hands-on introduction to the open-source PSVN system that I have developed to study domain-independent methods for heuristic search. The PSVN language for specifying state spaces extends SAS+ in a simple but powerful way, allowing operators to be completely specified without being fully grounded. This leads to much more compact representations of many state spaces. For example, IPC problem #18 in the Scanalyzer domain has over 300,000 operators in SAS+ but requires only 65 operators in PSVN. PSVN specifications are compiled to C by the psvn2c compiler, which implements a powerful form of partial order reduction ("move pruning" (Burch and Holte, SoCS 2012)). The PSVN suite contains high-performance implementations of several search algorithms, and a substantial number of test domains (including the IPC domains translated

from SAS+ to PSVN).

The tutorial is of a hands-on nature. To get the most out of it, attendees would need a laptop running Unix and with a C and C++ compiler installed, so they can download the PSVN system and work with it during the tutorial. The tutorial would begin with a brief (~45 minutes) introduction to PSVN, and then let people work individually through a sequence of tutorial lessons that will take them step by step from installing the software to writing domain-independent search algorithms that use pattern databases to define heuristics.

Models and Paradigms for Planning under Uncertainty: a Broad Perspective (MPPU)

08.45-09.00	Welcome and Introductory Remarks
09.00-09.30	Dan Bryce <i>Improving counter-example explanations with planning and learning</i>
09.30-10:00	Martin Wehrle <i>Directed Model Checking for Timed Systems</i>
10:00-10:30	Coffee Break
10.30-11.00	Daniele Magazzeni <i>Model-Checking based Planning for Hybrid Domains</i>
11.00-11.30	Sicun Gao <i>Delta-Complete Reachability Analysis for Hybrid Systems: a Planning Perspective</i>

11.30-12.00	Erion Plaku <i>Motion Planning with Linear Temporal Specifications for Hybrid Systems</i>
12.00-14.00	Lunch Break
14.00-14.30	Maria Fox <i>Hybrid Plans Validation using VAL</i>
14.30-15.00	Saddek Bensalem, Klaus Havelund, Andrea Orlandini <i>Verification and Validation Meet Planning and Scheduling</i>
15.00-15.30	Coffee Break
15.30-16.00	Robert Goldman, David Musliner <i>Employing AI Techniques in Probabilistic Model Checking</i>
16.00-16.30	Stefan Edelkamp <i>Is Model Checking and Planning a Big Data Application?</i>
16.30-17.00	Discussion and Closing Remarks

Workshop on Model Checking and Automated Planning (MOCHAP)

08:55-09:00	Welcome and Introductory Remarks
	Tutorial
09:00-10:00	probabilistic planning non-deterministic planning possibilistic planning imprecise-probability planning partially-observable planning
10:00-10:20	Coffee Break
	Oral Presentations
10:20-10:45	Zohar Feldman, Carmel Domshlak <i>Monte-Carlo Tree Search: To MC or to DP?</i>
10:45-11:10	Ofra Amir, Barbara Grosz and Roni Stern

	<i>To Share or Not to Share? The Single Agent in a Team Decision Problem</i>
11:10-11:35	Christian Muise, Vaishak Belle and Sheila A. Mcilraith <i>Computing Contingent Plans via Fully Observable Non-Deterministic Planning</i>
11:35-12:00	Jorge Baier, Brent Mombourquette and Sheila Mcilraith <i>Diagnostic Problem Solving via Planning with Ontic and Epistemic Goals</i>
12:00-13:45	Lunch Break
13:45-14:45	Invited talk by Ronen Brafman: <i>planning under uncertainty: reductions, replanning, simplifications</i>
14:45-15:10	Ran Taig and Ronen I. Brafman <i>A Relevance-Based Compilation Method for Conformant Probabilistic Planning</i>
15:10-15:30	Coffee Break
15:30-15:55	Nicolas Drougard, Florent Teichtel-Königsbuch and Jean-Loup Farges

	<i>Structured Possibilistic Planning using Decision Diagrams</i>
15:55-16:20	Hector Palacios, Alexandre Albore and Hector Geffner <i>Compiling Contingent Planning into Classical Planning: New Translations and Results</i>
16:45-17:15	Discussion and Concluding Remarks

Knowledge Engineering for Planning and Scheduling (KEPS)

08:30-08:40	Welcome
8:40-10:00	Introductory Talks
	David E. Smith <i>Domesticating ANML</i>
	Tiago Vaquero <i>Modeling P&S Problems: Lessons Learned using UML/PDDL</i>
10:00-10:20	Coffee Break
10:20-11:50	Session: Knowledge Engineering and Applications
	José Carlos Pulido, José Carlos González, Arturo GonzálezFerrer, Javier García, Fernando Fernández, Antonio Bandera, Pablo Bustos and Cristina Suárez <i>Goal-directed Generation of Exercise Sets for Upper-Limb Rehabilitation</i>

	Shirin Sohrabi, Octavian Udrea and Anton Riabov <i>Knowledge Engineering for Planning-Based Hypothesis Generation</i>
	Masataro Asai and Alex Fukunaga <i>Applying Problem Decomposition to Extremely Large Planning Domains</i>
	Commentator: Session chair
11:50-13:40	Lunch Break
13:40-15:10	Session: Modeling Tools and Translations
	Gerhard Wickler, Lukáš Chrpá and Thomas Leo Mccluskey. <i>Creating Planning Domain Models in KEWI.</i>
	Rabia Jilani, Andrew Crampton, Diane Kitchin and Mauro Vallati <i>Automated Knowledge Engineering Tools in Planning: State-of-the-art and Future Challenges</i>
	Alfonso Emilio Gerevini and Luca Ceriani <i>Planning with Preferences by Compiling Soft Always Goals into STRIPS</i>

	<i>with Action Costs</i>
	Commentator: Session chair
15:10-15:30	Coffee Break
15:30-16:30	Session: Planning and Plan Analysis
	Mohammad Abdul Aziz, Charles Gretton and Michael Norrish <i>Mechanising Theoretical Upper Bounds in Planning</i>
	Tomáš Balyo and Lukáš Chrpá <i>Eliminating All Redundant Actions from Plans Using SAT and MaxSAT</i>
	Commentator: Session chair
16:30-17:00	Open Discussion and ICKEPS 2015 Intro

Planning and Robotics (PlanRob Day 2)

09:00-10:00	Keynote: Leslie Kaelbling
10:00-10:30	Coffee Break
	Session: Task and Motion Planning
10:30-10:45	Srinivas Nedunuri, Sailesh Prabhu, Mark Moll, Swarat Chaudhuri and Lydia Kavraki <i>Synthesis of Plans for Robots (SHORT PAPER – 15 min)</i>
10:45-11:10	Caelan Garrett, Tomas Lozano-Perez and Leslie Kaelbling <i>Heuristic Search for Task and Motion Planning</i>
11:10-11:35	Ron Petrick and Andre Gaschler <i>Extending Knowledge-Level Contingent Planning for Robot Task Planning</i>
11:35-12:00	Furkan Sahin, Vural Aksakalli and Ali Fuat Alkaya <i>A Fast and Effective Online Algorithm for the Canadian Traveler Problem</i>

12:00-12:25	Andras Kovacs <i>Collision-free Path Planning for Remote Laser Welding</i>
12:25-13:10	Panel Discussion (45 min)

Opening Reception

The Opening Reception will be held at (walking map available on next page):

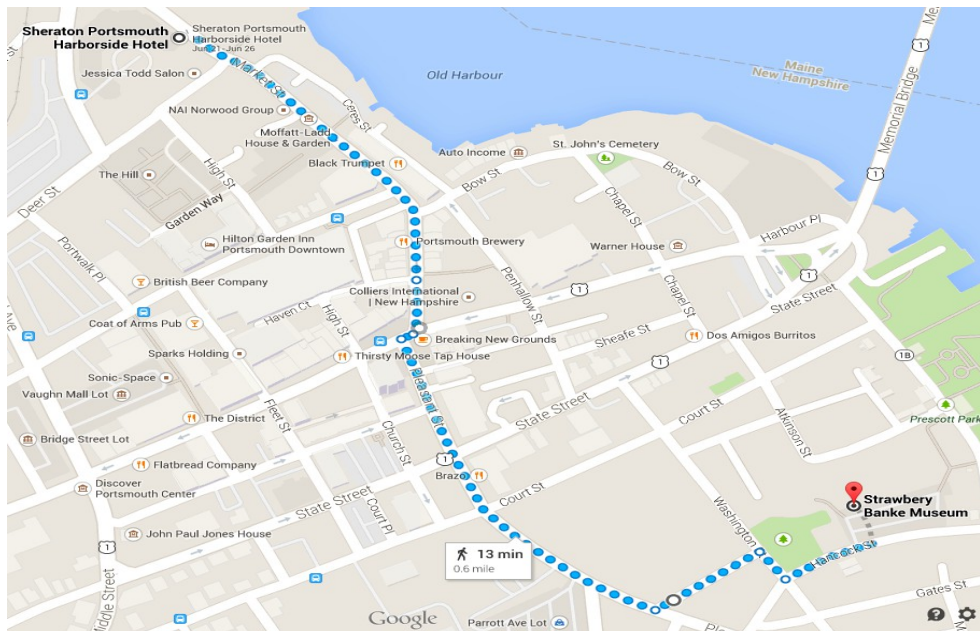
Strawberry Banke Museum
Hancock St, Portsmouth, NH 03801
(603) 433-1100

We will have volunteers leading the group. Please meet them at **17:00** in front of the Sheraton. The group will begin walking to the reception at 17:05!

Strawberry Banke Museum, in the heart of historic downtown Portsmouth, New Hampshire, is an authentic 10-acre outdoor history museum, listed on the National Register of Historic Places and dedicated to bringing 300+ years of American history to life.

Strawberry Banke is a place to learn about architecture, heritage plants and foodways, traditional crafts and the tools, clothing and collections people used for everyday life in the 1600s, 1700s, 1800s and up through 1954 when the site was saved from urban renewal.

The Museum is a place for children, adults, multigenerational families and groups to gather to explore heritage gardens, historic buildings and crafts, preservation programs, hands-on activities, the stories told by costumed role-players, traditional crafts and the changing exhibits that offer hours of fun and discovery. The Museum's restored buildings and open space invite visitors to immerse themselves in the past.



Tue, June 24 2014

07:45-16:15	Registration
08:20-08:35	Opening Remarks and Award Ceremony
08:35-09:40	Invited Talk: Peter Wurman <i>How to Coordinate a Thousand Robots</i>

Peter Wurman
How to Coordinate a Thousand Robots

Kiva Systems, an Amazon subsidiary, fills warehouses with thousands of robots to move inventory shelves to human pickers. The Kiva solution eliminates walking by the operators, making them 2-4x more efficient. Planning and scheduling are at the heart of Kiva's software architecture. I will discuss some of the specific scheduling challenges inherent in such a massively parallel coordinated robotic system, including path planning, job planning, delivery scheduling, and load balancing.



Pete Wurman is CTO of Kiva Systems, the Boston-based company that pioneered the use of mobile robotics in warehouses and distribution facilities. Pete joined Kiva in 2004 as a technical co-founder with Raff D'Andrea to help founder Mick Mountz bring his vision to life. In May of 2012, Kiva was acquired by Amazon.com. Prior to joining Kiva, Pete was an Associate Professor of Computer Science at North Carolina State University in Raleigh, NC. Pete's teaching focus was e-commerce systems, and his research focused on electronic auctions (especially combinatorial auctions), multi-agent systems, and resource allocation. Pete earned his Ph.D. in Computer Science from the University of Michigan in 1999, and his B.S. in Mechanical Engineering from M.I.T. in 1987.

09:40-09:45	Break
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09:45-10:45

Session AM 1a: Search
(chair: Jordan Thayer)

Daniel Harabor and Alban Grastien
Improving Jump Point Search

Mike Phillips, Sven Koenig and Maxim
Likhachev
Parallel A for Planning with Time-
consuming State Expansions*

Vidal Alcázar, Susana Fernandez and
Daniel Borrajo
*Analyzing the Impact of Partial States on
Duplicate Detection and Collision of
Frontiers*
(short paper)

**Session AM 1b: Markov
Decision Processes**
(chair: Scott Sanner)

Aijun Bai, Feng Wu, Zongzhang
Zhang and Xiaoping
Chen *Thompson Sampling based
Monte-Carlo Planning in
POMDPs*

Truong-Huy Nguyen, Tomi
Silander, Wee-Sun Lee and Tze-
Yun Leong
*Bootstrapping Simulation-based
Algorithms with a Suboptimal
Policy*

Todd Hester and Peter Stone
*TEXPLORE: Real-Time Sample-
Efficient Reinforcement
Learning for Robots*
(Journal Track)

10:45-11:05	Coffee Break	
11:05-12:15	Session AM 2a: Planning Heuristics and Search (chair: Andrew Coles) Ron Alford, Vikas Shivashankar, Ugur Kuter and Dana Nau <i>On the Feasibility of Planning Graph Style Heuristics for HTN Planning</i>	Session AM 2b: Markov Decision Processes (chair: Alan Fern) Zohar Feldman and Carmel Domshlak <i>On MABs and Separation of Concerns in Monte-Carlo Planning for MDPs</i> Ping Hou, William Yeoh and Pradeep Varakantham <i>Revisiting Risk-Sensitive MDPs: New Algorithms and Results</i>

11:05-12:15 (continued)	Michael Barley, Santiago Franco and Patricia Riddle <i>Overcoming the Utility Problem in Heuristic Generation: Why Time Matters</i> Stefan Edelkamp, Peter Kissmann and Martha Rohte <i>Symbolic and Explicit Search Hybrid through Perfect Hash Functions – A Case Study in Connect Four</i>	Diederik Roijers, Joris Scharpff, Matthijs Spaan, Frans Oliehoek, Mathijs De Weerd and Shimon Whiteson <i>Bounded Approximations for Linear Multi-Objective Planning under Uncertainty</i>
12:15-14:00	Lunch Break (and System Demo setup)	

14:00-14:45	Session PM 1a: Planning Heuristics (chair: Joerg Hoffman) Blai Bonet and Menkes van den Briel <i>Flow-based Heuristics for Optimal Planning: Landmarks and Merges</i> Jendrik Seipp and Malte Helmert <i>Diverse and Additive Cartesian Abstraction Heuristics</i>	Session PM 1b: Planning Under Uncertainty (chair: Subbarao Kambhampati) Luis Pineda and Shlomo Zilberstein <i>Planning under Uncertainty Using Reduced Models: Revisiting Determinization</i> Guy Shani, Erez Karpas, Ronen Brafman and Shlomi Maliah <i>Partially Observable Online Contingent Planning Using Landmark Heuristics</i>
14:45-14:50	Break	

14:50-16:05	Session PM 2a: Planning Heuristics (chair: Carmel Domshlak) Bram Ridder, Maria Fox and Derek Long <i>Heuristic Evaluation based on Lifted Relaxed Planning Graphs</i> Richard Valenzano, Nathan Sturtevant, Jonathan Schaeffer and Fan Xie <i>A Comparison of Knowledge-Based GBFS Enhancements and Knowledge-Free Exploration</i> (short paper)	Session PM 2b: Planning Under Uncertainty Miquel Ram��rez and Sebastian Sardina <i>Directed Fixed-Point Regression-based Planning for Non-Deterministic Domains</i> Tuan Nguyen and Subbarao Kambhampati <i>An Heuristic Approach to Planning with Incomplete STRIPS Action Models</i> A. Kuestenmacher, N. Akhtar, P. Pl��ger and G. Lakemeyer <i>Towards Robust Task Execution for Domestic Service Robots</i> (Journal Track)
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14:50-16:05 (continued)	Florian Pommerening, Gabriele Röger, Malte Helmert and Blai Bonet <i>LP-based Heuristics for Cost-optimal Planning</i> Benjamin Cohen, Sachin Chitta, and Maxim Likhachev <i>Single and Dual-Arm Motion Planning with Heuristic Search</i> (Journal Track)	Christian Muise, Sheila Mcilraith and Vaishak Belle <i>Non-Deterministic Planning With Conditional Effects</i> (short paper)
16:05-16:15	Break Poster Set-up	
16:15-18:45 (open end)	Posters and System Demos (Posters will be done in TWO shifts: 16:15 - 17:30 and 17:30 - 18:45)	

Wed, June 25, 2014

08:00-16:15	Registration
08:30-08:35	Remarks
08:35-09:40	Invited Talk: Michael Littman <i>Planning In The Context Of Model-based Reinforcement Learning</i>

Michael Littman

Planning In The Context Of Model-based Reinforcement Learning

Reinforcement learning (RL) is the problem of deriving goal-directed behavior from interaction with an environment. Model-based approaches to RL separate the task into two pieces---use ideas from machine learning to infer the dynamics of the environment in the form of a transition model, then use ideas from automated planning to decide what to do in this model. While, in principle, generic learning and planning approaches can be brought to bear, both subproblems are impacted by the fact that they are being applied in tandem. I will describe how my group has modified learning and planning approaches to work together in model-based RL with a focus on planning techniques that we have found

particularly well suited in this setting.



Michael L. Littman's research in machine learning examines algorithms for decision making under uncertainty. He has earned multiple awards for teaching and his research has been recognized with three best-paper awards on the topics of meta-learning for computer crossword solving, complexity analysis of planning under uncertainty, and algorithms for efficient reinforcement learning. Littman has served on the editorial boards for the Journal of Machine Learning Research and the Journal of Artificial Intelligence Research. He was general chair of International Conference on Machine Learning 2013 and program chair of the Association for the Advancement of Artificial Intelligence Conference 2013.

09:40-09:45	Break
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09:45-10:45	Session AM 1a: Classical Planning (chair: Joerg Hoffman) Carmel Domshlak and Anton Nazarenko <i>The Complexity of Optimal Monotonic Planning: The Bad, The Good, and The Causal Graph</i> (Journal Track) Xing Tan and Michael Gruninger <i>The Complexity of Partial-Order Plan Viability Problems</i> Martin Wehrle and Malte Helmert <i>Efficient Stubborn Sets: Generalized Algorithms and Selection Strategies</i>	Session AM 1b: Temporal Planning (chair: Amanda Coles) Cedric Pralet and Gerard Verfaillie <i>Time-dependent Simple Temporal Networks: Properties and Algorithms</i> (Journal Track) Pedro Santana and Brian Williams <i>Chance-Constrained Consistency for Probabilistic Temporal Plan Networks</i> Toby O. Davies, Adrian R. Pearce, Peter J. Stuckey and Harald Søndergaard <i>Fragment-Based Planning Using Column Generation</i>
10:45-11:05	Coffee Break	

11:05-12:15	Session AM 2a: Robotics and Applications (chair: Roman Bartak) Nir Lipovetzky, Christina Burt, Adrian Pearce and Peter Stuckey <i>Planning for Mining Operations with Time and Resource Constraints</i> (Application Track) Christopher Expósito Izquierdo, Belen Melian and Marcos Moreno <i>Optimization Model and Heuristic Approach for Blocks Retrieval Processes in Warehouses</i> Roberto Boselli, Mirko Cesarini, Fabio Mercorio and Mario Mezzanzanica <i>Planning meets Data Cleansing</i> (Application Track - short paper)	Session AM 2b: Scheduling (chair: Chris Beck) Frits de Nijs and Tomas Klos <i>A Novel Priority Rule Heuristic: Learning from Justification</i> Akshat Kumar, Sudhanshu Singh, Pranav Gupta and Gyana Parija <i>Near-Optimal Nonmyopic Contact Center Planning Using Dual Decomposition</i> (Application Track)
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11:05-12:15 (continued)	Iman Awaad, Gerhard K. Kraetzschmar and Joachim Hertzberg <i>Finding Ways to Get the Job Done: An Affordance-based Approach</i> (Robotics Track - short paper)	Cédric Pralet, Gérard Verfaillie, Adrien Maillard, Emmanuel Hébrard, Nicolas Jozefowicz, Marie-Josée Huguet, Thierry Desmousseaux, Pierre Blanc-Paques and Jean Jaubert <i>Satellite Data Download Management with Uncertainty about the Generated Volumes</i> (Application Track)
12:15-13:50	Lunch Break	

13:50-14:55	Session PM 1a: Planning with Costs and Resources (chair: Minh Do) Franc Ivankovic, Patrik Haslum, Sylvie Thiebaux, Vikas Shivashankar and Dana Nau <i>Optimal Planning with Global Numerical State Constraints</i> Peter Ondruska and Ingmar Posner <i>The Route Not Taken: Driver-Centric Estimation of Electric Vehicle Range</i> (Application Track) Enrico Scala <i>Plan Repair for resource constrained tasks via numeric macro actions</i>	Session PM 1b: Temporal Planning Amanda Coles and Andrew Coles <i>Reasoning with Events and Linear Processes in Forward Chaining Planning</i> Eliseo Marzal, Laura Sebastia and Eva Onaindia <i>On the use of temporal landmarks for planning with deadlines</i> Simon Parkinson, Peter Gregory, Andrew Longstaff and Andrew Crampton <i>Automated Planning for Multi-Objective Machine Tool Calibration: Optimising Makespan and Measurement Uncertainty</i> (Application Track)
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14:55-15:00	Break
15:00-16:30	IPC Results <i>Deterministic Track</i> Lukas Chrpá, Mauro Vallati, and Lee McCluskey <i>Learning Track</i> Mark Roberts and Michael Siebers <i>Probabilistic Planning Track: Continuous</i> Scott Sanner and Dan Magazzeni <i>Probabilistic Planning Track: Discrete</i> Marek Grzes and Jesse Hoey
16:30-16:45	Coffee Break
16:45-18:45	Community Meeting (includes Best Dissertation Talk)

19:00	Banquet Buses will depart at 18:50
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Banquet

The Banquet will be held at:

Seacoast Science Center
Odiorne Point State Park
570 Ocean Blvd
Rye, NH 03870
(603)-436-8043

Buses will be available for transportation to and from the Seacoast Science Center at Odiorne Point State Park. The buses will run on a loop from the Portsmouth Sheraton Harborside to the Seacoast Science Center. The first shuttle will depart promptly at **18:50** from in front of the Hotel. The last shuttle back to the the hotel will be at **22:00**.

At Odiorne Point State Park picnickers can enjoy sweeping views of the ocean and rocky shore, and explorers can uncover evidence of past military occupation. An extensive network of trails wind through the dense vegetation and traverse the park. The Seacoast Science Center, which is located in the park, has exhibits relating to the natural and human history of Odiorne and the seacoast area.

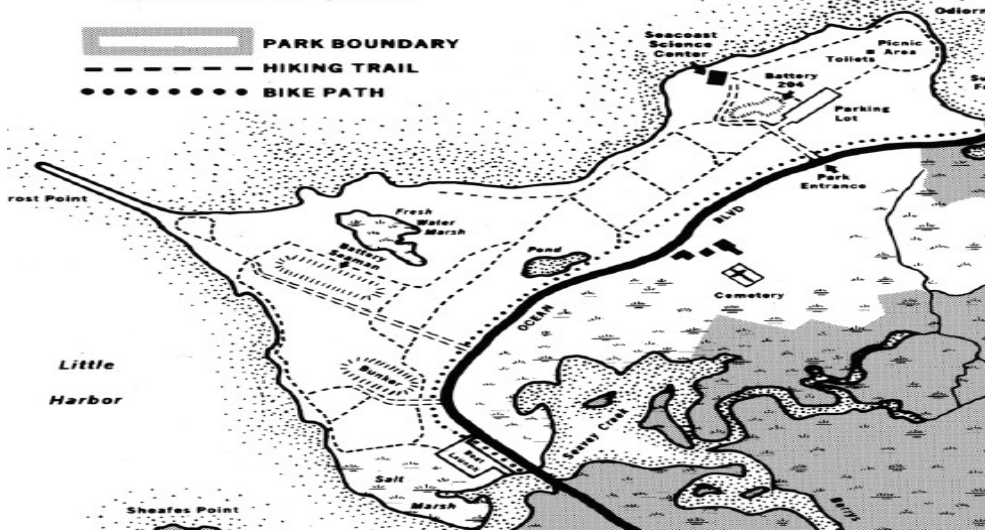
The Seacoast Science Center is the perfect place to explore, discover, and connect

with nature - especially the salty kind. The entire family will be enthralled by the world of marine science, from snails to whales. Once you visit, you will know why so many people come back again and again; rain-or-shine, year-round.

ODIORNE POINT STATE PARK

Rye, New Hampshire

-  PARK BOUNDARY
-  HIKING TRAIL
-  BIKE PATH



Thu, June 26 2014

08:00-12:15	Registration
08:30-08:35	Remarks
08:35-09:40	Invited Talk: Malik Ghallab <i>Coupling Problems in Planning & Acting</i>

Malik Ghallab

Coupling Problems in Planning & Acting

The conjunction of Planning & Acting has been around as a research issue since the early beginning of AI. Despite tremendous progress in each of the two subfields separately, the coupling problems in Planning & Acting remains open and unyielding to a firm grasp.

Can we do planning without acting? In cases where we cannot, when do we have coupling problems relevant to AI? What are these problems in

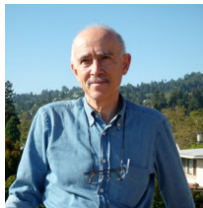
- the representation, modeling, observing and tracking of the world?
- the types of models and organizations of actions?

- the deliberation functions needed and possible techniques for addressing them?

The objective of this talk is to raise community interest in further research on coupling problems in Planning and Acting. It will present a broad overview of these problems and the corresponding state of the art, and sketch a possible framework of “refinement methods” for progressing in their resolution. The talk is based on collaborations and ideas expressed in [1, 2].

[1] M. Ghallab, D. Nau, and P. Traverso, “The actor’s view of automated planning and acting: A position paper,” Artificial Intelligence, vol. 208, pp. 1–17, Mar. 2014.

[2] F. Ingrand and M. Ghallab, “Deliberation for Autonomous Robots: A Survey,” LAAS-CNRS report, May 2014.



Malik Ghallab is a senior research scientist at LAAS-CNRS, University of Toulouse. His research activity is mainly focused on planning, acting and learning in robotics and AI. He contributed to topics such as object recognition and pattern matching, scene interpretation, heuristics search,

unification algorithms, knowledge compiling, temporal reasoning, planning, monitoring, and learning of robots skills and models of behaviors.

09:40-09:45	Break	
09:45-10:45	Session AM 1a: Assembly and Manufacturing (chair: David Smith) Pascal Bercher, Susanne Biundo, Thomas Geier, Thilo Hoernle, Florian Nothdurft, Felix Richter and Bernd Schattenberg <i>Plan, Repair, Execute, Explain - How Planning Helps to Assemble your Home Theater</i> (Application Track)	Session AM 1b: Transformation and Composition (chair: Dan Bryce) Carlos Areces, Facundo Bustos, Martin Dominguez, and Joerg Hoffmann <i>Optimizing Planning Domains by Action Schema Splitting</i>

09:45-10:45 (continued)	Masataro Asai and Alex Fukunaga <i>Fully Automated Cyclic Planning for Large-Scale Manufacturing Domains</i>	Lukas Chrpá, Mauro Vallati and Thomas Leo McCluskey <i>MUM: A Technique for Maximising the Utility of Macro-operators by Constrained Generation and Use</i> Giuseppe De Giacomo, Fabio Patrizi, and Sebastian Sardina <i>Building Virtual Behaviors from Partially Controllable Available Behaviors in Nondeterministic Environments</i> (Journal Track)
10:45-11:05	Coffee Break	

11:05-12:15

Session AM 2a: Robotics
(chair: Malik Ghallab)

T. K. Satish Kumar, Sangmook
Jung and Sven Koenig
*A Tree-Based Algorithm for
Construction Robots*
(Robotics Track)

Steven Levine and Brian Williams
*Concurrent Plan Recognition and
Execution for Human-Robot
Teams*
(Robotics Track)

Fangkai Yang, Piyush
Khandelwal, Matteo Leonetti,
Vladimir Lifschitz and Peter Stone
*Planning in Action Language BC
while Learning Action Costs for
Mobile Robots*
(Robotics Track)

**Session AM 2b: Multi-Agent
Planning**

(chair: Shlomo Zilberstein)

Michal Štolba and Antonín Komenda
*Relaxation Heuristics for Multiagent
Planning*

Yevgeniy Vorobeychik, Bo An, Milind
Tambe and Satinder Singh
*Computing Solutions in Infinite-
Horizon Discounted Adversarial
Patrolling Games*

Christopher Wilt and Adi Botea
*Spatially Distributed Multiagent Path
Planning*

12:15-14:00	Lunch Break
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14:00-14:45	Session PM 1a: Controllability (chair: Steve Smith) Peng Yu, Cheng Fang and Brian Williams <i>Resolving Uncontrollable Conditional Temporal Problems using Continuous Relaxations</i> Mikael Nilsson, Jonas Kvarnström and Patrick Doherty <i>Efficient IDC: A Faster Incremental Dynamic Controllability Algorithm</i>	Session PM 1b: Robotics (chair: Michael Otte) J. Capitan, M. Spaan, L. Merino, and A. Ollero <i>Decentralized Multi-Robot Cooperation with Auctioned POMDPs</i> (Journal Track) Leslie Pack Kaelbling and Tomas Lozano-Perez <i>Integrated Task and Motion Planning in Belief Space</i> (Journal Track) Dirk Ruiken, Michael W. Lanighan and Roderic A. Grupen <i>Path planning for dexterous mobility</i> (Robotics Track - short paper)
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14:45-14:50	Break	
14:50-15:45	Session PM 2a: Goal and Plan Recognition (chair: Daniel Borrajo) Sarah Keren, Erez Karpas and Avigdor Gal Goal Recognition Design Richard Freedman, Hee-Tae Jung and Shlomo Zilberstein <i>Plan and Activity Recognition from a Topic Modeling Perspective</i> (short paper)	Session PM 2b: Motion and Path Planning (chair: Jordan Thayer) Carlos Hernández Ulloa, Jorge Baier and Roberto Asín <i>Making A* Run Faster than D*-Lite in Path-Planning in Partially Known Terrain</i> (Robotics Track - short paper) Marcello Cirillo, Federico Pecora, Henrik Andreasson, Tansel Uras, and Sven Koenig <i>Integrated Motion Planning and Coordination for Industrial Vehicles</i> (Robotics Track)

14:50-15:45 (continued)	Sam Wiseman and Stuart Shieber <i>Discriminatively Reranking Abductive Proofs for Plan Recognition</i>	Michael W. Otte and Nikolaus Correll <i>C-FOREST: Parallel Shortest-Path Planning with Super Linear Speedup</i> (Journal Track)
15:45-16:00	Coffee Break	
16:00-17:07	Session PM 3a: Classical Planning (chair: Erez Karpas) Manuel Heusner, Martin Wehrle, Florian Pommerening and Malte Helmert <i>Under-Approximation Refinement for Classical Planning</i> (short paper)	Session PM 3b: Plan Diversity (chair: Minh Do) Daniel Bryce <i>Landmark-Based Plan Distance Measures for Diverse Planning</i> Mark Roberts, Adele Howe and Indrajit Ray <i>Evaluating Diversity for Classical Planning</i>

16:00-17:07 (continued)	Chris Fawcett, Mauro Vallati, Frank Hutter, Jörg Hoffmann, Holger H. Hoos and Kevin Leyton-Brown <i>Improved Features for Runtime Prediction of Domain- Independent Planners</i> (short paper) Martin Suda <i>Property Directed Reachability for Automated Planning</i> (Journal Track) Caroline Ponzoni Carvalho Chanel, Charles Lesire and Florent Teichtel-Königsbuch <i>A Robotic Execution Framework for Online Probabilistic (Re)Planning</i> (Robotics Track)	
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17:07-17:12	Closing Remarks
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17:07-17:12	Closing Remarks
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After ICAPS-14

ICAPS 2015 will be held in Jerusalem, Israel. For more information, visit icaps15.icaps-conference.org!

To keep in touch with planning and scheduling research, as well as future ICAPSeS and related conferences, please join the **icaps-conference** and **planning-list** mailing lists at Google Groups (groups.google.com). Note that no Google account is necessary!