



ICAPS 2006

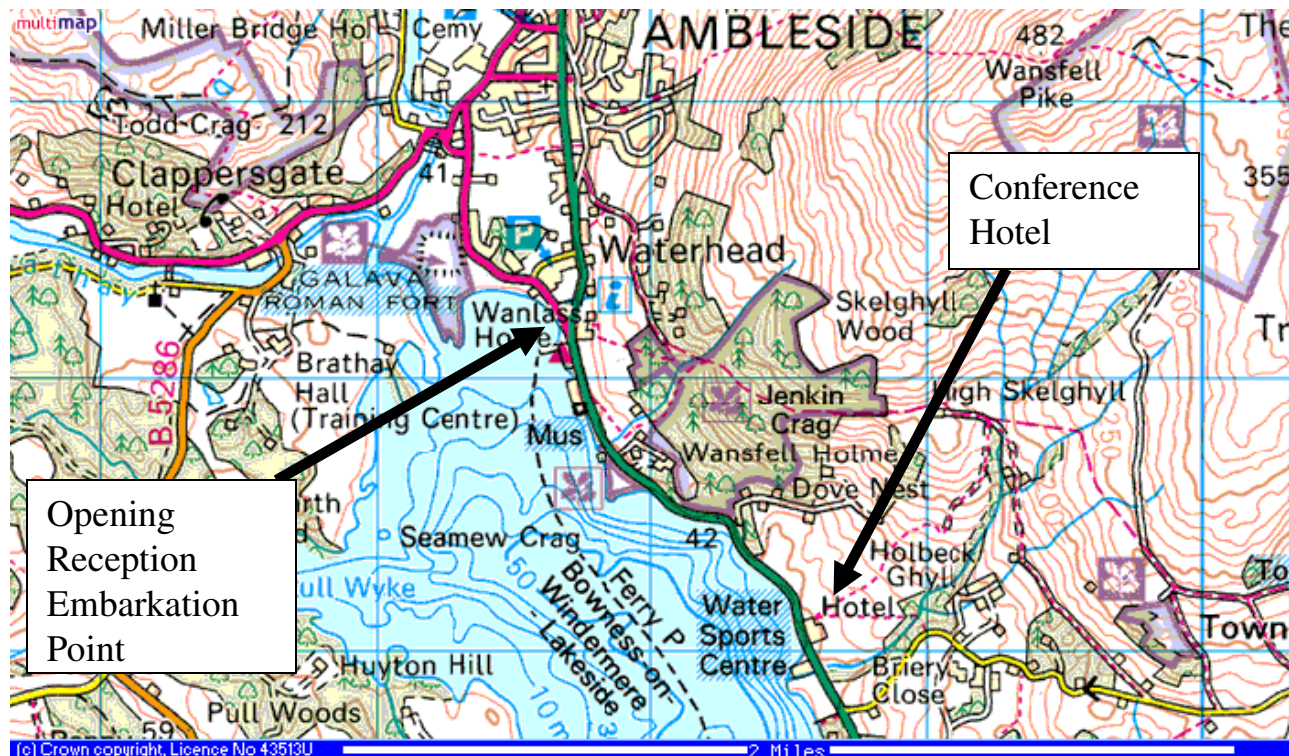
Programme

Table of contents

Information1
Programme Overview 2
Workshops and Tutorials3
Conference Detailed Programme4

ICAPS 2006 - Important Information

1. **Opening Reception on Lake Windermere (Wednesday Evening).** Please be at the **embarkation point** at 6.45pm (see map). This is exactly one mile north of the Hotel along the path beside the main road towards Ambleside. The boat leaves at 7pm sharp. You may choose to find your own way to the quayside, or take advantage of the *coach that will depart from the Low Wood Hotel at 6.30pm.*
2. **Buses.** The bus service outside the Hotel runs every 20 minutes in both directions. Ambleside (2Km distance) is a couple of minutes by bus from the conference (get the bus from the Lake side of the road outside the Hotel). Tickets are bought from the driver on the bus and are about 1-40p to the town centre. In the other direction, Windermere and Bowness (5 Km distance) are tourist towns with many restaurants and shops (for Windermere get on the bus on the Hotel side of the road).
3. **Lunches, Receptions, Banquet.** Please collect your vouchers from the registration area. These will be available each morning before 10am Tuesday through to Friday morning. **It is very important that you pick up exactly the vouchers you need** as this allows us to predict how many people to cater for.
4. **Local Arrangements Staff.** Staff wearing University of Huddersfield tee-shirts are available to give you any help you need during the conference.
5. **Local Restaurants.** Should you wish to dine out of the Hotel, there are many good restaurants in Ambleside and Windermere but it is advisable to book at the weekends.



Programme

(sessions marked with * include a Best Paper Award)

Start Time	Tue 6th	Wed 7th	Thu 8th	Fri 9th	Sat 10th
8:15			Opening Remarks		
8:30					
9:00	Tutorials: T1, T2 Workshops: W1, W3	Tutorials: T4, T5 Workshops: W2, W4, W6	Invited Talk (<u>Enrico Giunchiglia</u>)	Invited Talk (<u>Claude LePape</u>)	Invited Talk (<u>Brian C. Williams</u>)
9:30			Session1	Session5	Session9
10:00					
10:30	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
11:00					
11:30	Tutorials: T1, T2 Workshops: W1, W3	Tutorials: T4, T5 Workshops: W2, W4, W6	Session2	Session6 (*)	Session10
12:00					
12:30	Lunch	Lunch	Lunch	Lunch	Lunch
14:00					
14:30	Tutorials: T3 Workshops: W1, W3, W5	Tutorials: T6, T7 Workshops: W4, W6	Session3	Session7	Session11
15:00					
15:30	Coffee Break	Coffee Break	Coffee Break	Coffee Break	Coffee Break
16:00					
16:30	Tutorials: T3 Workshops: W1, W3, W5	Tutorials: T6, T7 Workshops: W4, W6	Session4 (*)	Session8	Session12 (*)
17:00				Business meeting	Session13
17:30			IPC'06 Results		
18:00					Closing Remarks
18:30					
19:00		Opening Reception on Lake Windermere	Doctoral Consortium, "Open House" software demos, Posters & Snacks	Gala Dinner And Awards Ceremony in The Lakes Suite	
19:30					
20:00					
20:30					
21:00--					

WORKSHOPS/TUTORIALS Schedule

THE LAKES SUITE					
TUES 6th	Coniston	Ullswater	Thirlmere	Rydal & Elterwater	Derwent
AM	W1 Preferences and Soft Constraints in Planning <i>Alfonso Gerevini, Derek Long</i>	W3 Planning under Uncertainty and Execution Control for Autonomous Systems <i>Christophe Guettier</i>	T2 Filtering Techniques in Planning and Scheduling <i>Roman Bartak</i>	T1 Challenges in Subsea Robotics <i>Jim Bellingham, Bill Kirkwood, Kanna Rajan</i>	
PM	W1 Preferences and Soft Constraints in Planning <i>Alfonso Gerevini, Derek Long</i>	W3 Planning under Uncertainty and Execution Control for Autonomous Systems <i>Christophe Guettier</i>	T3 Meta-heuristics for Solving Scheduling Problems <i>Angelo Oddi</i>	W5 Plan Analysis and Management <i>Lee McCluskey Karen Myers Biplav Srivastava</i>	
WEDS 7th					
AM	W4 AI Planning for Computer Games and Synthetic Characters <i>Ruth Aylett, Michael Young</i>	W6 Constraint Satisfaction Techniques for Planning and Scheduling Problems <i>Miguel A. Salido, Antonio Garrido, Alexande Nareyek, Maria Fox</i>	T4 Planning and Complexity <i>Malte Helmert</i>	T5 Planning activities for Earth watching and observation satellites and constellations: from off-line ground planning to on-line on-board planning <i>Gerard Verfaillie, Michel Lemaître</i>	W2 POMDPs, Classification and Regression: Relationships and Joint Utilization <i>Xuejun Liao, Lawrence Carin</i>
PM	W4 AI Planning for Computer Games and Synthetic Characters <i>Ruth Aylett, Michael Young</i>	W6 Constraint Satisfaction Techniques for Planning and Scheduling Problems <i>Miguel A. Salido, Antonio Garrido, Alexander Nareyek, Maria Fox</i>	T7 Multiagent Planning and Scheduling <i>Bradley J. Clement</i>	T6 Planning Graph Based Reachability Heuristics <i>Daniel Bryce, Subbarao Kambhampati</i>	

Coffee Breaks: 10:30 – 11:00 and 15:30 – 16:00 in the Lounge

Lunch Breaks: 12:30 – 14:00 in the Restaurant

Changes to the above will be on the Information Board at the Registration Desk

W1: Preferences and Soft Constraints in Planning

Tuesday, June 6th

Room: Coniston

9:10 - 9:15	Workshop Introduction and Welcome
9:15 - 9:40	Planning with Soft Regular Constraints Alessandro Zanarini, Gilles Pesant, and Michela Milano
9:40 - 10:05	Temporal Preference Optimization as Weighted Constraint Satisfaction Michael D. Moffitt and Martha E. Pollack
10:05 - 10:30	Elicitation and Application of Narrative Constraints Through Mixed- Initiative Planning James M. Thomas, and R. Michael Young
10:30 - 11:00	<i>Coffee Break</i>
11:00 - 11:25	A Multivalued planning model for soft preconditions and preferences M. Baiocchi, A. Milani, V. Poggioni, and S. Suriani
11:25 - 11:50	Preferences and Soft Constraints in PDDL3 Alfonso Gerevini and Derek Long
11:50 - 12:15	Cost-Optimal Planning with Constraints and State Spaces Stefan Edelkamp, Shahid Jabbar, and Mohammed Nazih
12:30 - 14:00	<i>Lunch Break</i>
14:10 - 14:35	Cost-Optimal Symbolic Pattern Database Planning with State Trajectory and Preference Constraints Stefan Edelkamp
14:35 - 15:00	Planning with Temporally Extended Preferences by Heuristic Search Jorge Baier, Jeremy Hunsberger, Fahiem Bacchus, and Sheila A. McIlraith
15:00 - 15:25	Handling Soft Constraints and Goals Preferences in SGPlan Chih-Wei Hsu, Benjamin W. Wah, Ruoyun Huang, and Yixin Chen
15:30 - 16:00	<i>Coffee Break</i>
16:00 - 16:35	Invited Talk by Carmel Domshlak
16:35 - 17:00	Planning with Goal Utility Dependencies Minh B. Do, J. Benton, and Subbarao Kambhampati
17:00 - 17:25	Planning with Preferences and Trajectory Constraints by Integer Programming Menkes van den Briel, Subbarao Kambhampati, and Thomas Vossen
17:25 - 18:00	Final Discussion and Workshop Conclusions

W2: POMDPs, Classification and Regression: Relationships and Joint Utilization

Wednesday, June 7th

Room: Derwent

9:00 - 10:30	A Brief Tutorial on the Partially Observable Markov Decision Process and Its Applications Lawrence Carin
	Optimal Sensor Scheduling via Classification Reduction of Policy Search (CROPS) Doron Blatt and Alfred O. Hero
	Adaptation of the Simulated Risk Disambiguation Protocol to a Discrete Setting Al Aksakalli, Donniell E. Fishkind, and Carey E. Priebe
10:30 - 11:00	<i>Coffee Break</i>
11:00 - 11:30	Application of Partially Observable Markov Decision Processes to Robot Navigation in a Minefield Lihan He, Shihao Ji, and Lawrence Carin
11:30 - 12:30	Panel (Open) Discussions <ul style="list-style-type: none">• What are emerging applications where POMDP theory can have impact (military and civilian) and what kinds of models are appropriate for these?• Common datasets for evaluating POMDP algorithms for sensing applications.• Bottlenecks in POMDP search and how to address them?• In what type of problems have POMDP approaches worked, i.e. beat out myopic approaches, and how to identify these problems?• Reinforcement learning approach for approximating POMDP optimal policies: is it practical?

W3: Planning under Uncertainty and Execution Control for Autonomous Systems

Tuesday, June 6th

Room: Ulswater

9:00 - 10:30	View Planning Algorithms for a Multi-Camera Surveillance System Jun Miura Noriko Takemura Takuro Sakiyama
	Compiling Uncertainty Away: Solving Conformant Planning Problems Using a Classical Planner (Sometimes) Héctor Palacios and Héctor Geffner
	Robust Execution of Contingent, Temporally Flexible Plans Stephen A. Block and Brian C. Williams
10:30 - 11:00	<i>Coffee Break</i>
11:00 - 12:30	Coordinated Plan Management Using Multiagent MDPs David J. Musliner, Edmund H. Durfee, Jianhui Wu, Dmitri A. Dolgov, Robert P. Goldman, Mark S. Boddy
	Using Correlation to Compute Better Probability Estimates in Plan Graphs Daniel Bryce and David E. Smith
	Inducing non-deterministic actions behaviour to plan robustly in probabilistic domains Sergio Jiménez, Fernando Fernández and Daniel Borrajo
12:30 - 14:00	<i>Lunch Break</i>
14:00 - 15:30	Controlability and Makespan Issues with Robot Action Planning and Execution Matthieu Gallien and Félix Ingrand
	Using Planning, Scheduling and Execution for Autonomous Mars Rover Operations Tara Estlin, Daniel Gaines, Caroline Chouinard, Forest Fisher, Rebecca Castano, Michele Judd, Benjamin Bornstein, Robert C. Anderson, and Issa Nesnas
	Learning Behaviors Models for Robot Execution Control Guillaume Infantes and Félix Ingrand and Malik Ghallab
15:30 - 16:00	<i>Coffee Break</i>
16:00 - 17:30	Panel Discussion: Progress (and otherwise) in planning with uncertainty and execution Panelists: Gerard Verfaillie, Kanna Rajan, Sylvie Thiebaux, Dan Gaines or Tara Estlin, Dave Smith, Wheeler Ruml

W4: AI Planning for Computer Games and Synthetic Characters

Wednesday, June 7th

Room: Coniston

9:00 - 9:15	Welcome and introduction Ruth Aylett
9:15 - 9:45	Body Mind and Emotion: An Overview of Agent Implementation in Mainstream Computer Games Stuart Slater Response James Thomas
9:45 - 10:30	Planning for an AI based virtual agents game Susana Fernández Response Borje Karlsson
10:30 - 11:00	<i>Coffee Break</i>
11:00 - 12:30	Applying a Plan-Recognition / Plan-Generation Paradigm to Interactive Storytelling Borje Karlsson Response Susana Fernández
	Author in the Loop: Using Mixed-Initiative Planning to Improve Interactive Narrative James Thomas Response Stuart Slater
	The use of planning in F.E.A Ruth Aylett Response Jeff Orkin
12:30 - 14:00	<i>Lunch Break</i>
14:00 - 15:30	Game evaluation session – groups 1-6
15:30 - 16:00	<i>Coffee Break</i>
16:00 - 16:30	Game evaluation conclusions
16:30 - 18:00	Evaluation presentations groups 1-6

W5: Plan Analysis and Management

Tuesday, June 6th

Room: Rydal and Elterwater

14:00 - 14:15	Introduction Karen Myers
14:15 - 15:00	Invited talk: Modifying Planning Knowledge by Instruction with Tailor Jim Blythe
15:00 - 15:30	Recording Rationale in <I-N-C-A> for Plan Analysis Gerhard Wickler, Stephen Potter, Austin Tate
15:30 -16:00	<i>Coffee Break</i>
16:00 - 17:00	Tool Support for Planning and Plan Analysis within Domains Embodying Continuous Change T. L. McCluskey and R. M.Simpson
	Finding Inter-Related Plans Biplav Srivastava, Subbarao Kambhampati, Minh Binh Do, Tuan A. Nguyen
17:00 - 17:30	Panel/ Open discussion Lead by Lee McCluskey
17:30 - 17:45	Close

W6: Constraint Satisfaction Techniques for Planning and Scheduling Problems

Wednesday, June 7th

Room: Ulswater

8:55 - 9:00	Presentation of the workshop
09:00 - 10:30	Distributed Constraint Satisfaction Problems to Model Railway Scheduling Problems M. Abril, M. A. Salido, F. Barber, L. Ingolotti, P. Tormos and A. Lova
	A Filtering and Decomposition Approach To Optimal Sequential Planning Stephane Grandcolas and Cyril Pain-Barre
	On State Management in Plan-Space Planning from CP Perspective Pavel Surynek
10:30 - 11:00	<i>Coffee Break</i>
11:00 - 12:30	Interleaving Planning and Scheduling: a Collaborative Approach Antonio Garrido and Eva Onaindía
	Scheduling with uncertain durations: generating Beta-robust schedules using constraint programming Christine Wei Wu, Kenneth N. Brown and J. Christopher Beck
	Fix the Schedule or Solve Again? Comparing Constraint-Based Approaches to Schedule Execution Riccardo Rasconi, Nicola Policella and Amedeo Cesta
12:30 - 14:00	<i>Lunch Break</i>
14:00 - 15:30	Factored Planning: How, When, and When Not Ronen I. Brafman and Carmel Domshlak
	Reverse Combinatorial Auctions for Resource Allocation in the Rescue Scenario Silvia Suarez and Beatriz López
	The Aspect of Quality in Scheduling Painting Tasks for an Automatic Robotic Spray System Ewa Kolakowska and Ole Madsen

Detailed Program

Thursday, June 8th

In red, Best papers awards

8:15-8:30	Opening remarks
08:30-09:30	Invited talk <ul style="list-style-type: none">SAT, QSAT and Beyond: State-of-the-art and Their Relation with Planning Enrico Giunchiglia (<i>Università di Genova</i>)
09:30-10:30	Session 1. Probabilistic planning I <ul style="list-style-type: none">Combining Knowledge Compilation and Search for Efficient Conformant Probabilistic Planning Jinbo HuangConcurrent Probabilistic Planning in the Graphplan Framework, Iain Little, Sylvie Thiebaux
10:30-11:00	<i>Coffee Break</i>
11:30-12:30	Session 2. Uncertainty, non-determinism, replanning <ul style="list-style-type: none">Bounded Branching and Modalities in Non-Deterministic Planning, Blai BonetOptimal Route Planning under Uncertainty, Evdokia Nikolova, Matthew Brand, David KargerPlan Stability: Replanning versus Plan Repair, Maria Fox, Alfonso Gerevini, Derek Long, Ivan Serina
12:30-14:00	<i>Lunch</i>
14:00-15:30	Session 3. Probabilistic planning II <ul style="list-style-type: none">Fast Probabilistic Planning Through Weighted Model Counting, Carmel Domshlak, Joerg HoffmanSequential Monte Carlo in Probabilistic Planning Reachability Heuristics, Daniel Bryce, Subbarao Kambhampati, David SmithSolving Factored MDPs with Exponential-Family Transition Models, Branislav Kveton, Milos Hauskrecht
15:30-16:00	<i>Coffee Break</i>
16:00-17:30	Session 4. Markov Decision Processes <ul style="list-style-type: none">Goal Achievement in Partially Known Partially Observable Domains, Allen Chang, Eyal AmirLearning Depth-First Search, Blai Bonet, Hector GeffnerStochastic Over-subscription Planning using Hierarchies of MDPs, Nicolas Meuleau, Ronen Brafman, Emmanuel Benazera
17:30-18:00	IPC'06 Results
18:30-20:30	Doctoral Conference consortium, Software demos, Posters & Snacks

Friday, June 9th

08:30-09:30	Invited talk <ul style="list-style-type: none"> Integrated Production Planning, Batching, and Scheduling, to Compromise among Antagonistic Optimization Criteria Claude LePape (<i>ILOG S.A.</i>)
09:30-10:30	Session 5. Search and benchmarks <ul style="list-style-type: none"> Memory-Efficient Symbolic Heuristic Search, Rune Jensen, Eric Hansen, Simon Richards, Rong Zhou New Complexity Results for Classical Planning Benchmarks, Malte Helmert
10:30-11:00	<i>Coffee Break</i>
11:30-12:30	Session 6. Scheduling I <ul style="list-style-type: none"> An Empirical Study of Multi-Point Constructive Search for Constraint-Based Scheduling, Chris Beck Exploiting the Power of Local Search in a Branch and Bound Algorithm for Job Shop Scheduling, Matthew Streeter, Stephen Smith Optimal Rectangle Packing: A Meta-CSP Approach, Michael Moffitt, Martha Pollack
12:30-14:00	<i>Lunch</i>
14:00-15:30	Session 7. Scheduling II <ul style="list-style-type: none"> Incremental Scheduling to Maximize Quality in a Dynamic Environment, Terry Zimmerman, Anthony Gallagher, Stephen Smith Looking for Shortcuts: Infeasible Search Analysis for Oversubscribed Scheduling Problems, Mark Rogers, Adele Howe, Darrell Whitley Tractable Optimal Competitive Scheduling, Jeremy Frank, James Crawford, Lina Khatib, Ronen Brafman
15:30-16:00	<i>Coffee Break</i>
16:00-17:00	Session 8. Planning applications I <ul style="list-style-type: none"> Predictive Planning for Supply Chain Management, David Pardoe, Peter Stone Scalable Planning for Distributed Stream Processing Systems, Anton Riabov, Zhen Liu
17:00-18:30	Business meeting
18:30-	Conference Dinner (includes Awards ceremony)

Saturday, June 10th

08:30-09:30	Invited talk <ul style="list-style-type: none"> Model-based Programming of Robust Agile Systems Brian Williams (MIT)
09:30-10:30	Session 9. Logic <ul style="list-style-type: none"> On Some Tractable Cases of Logical Filtering, T. K. Satish Kumar, Stuart Russell Safe LTL Assumption-Based Planning, Alexandre Albore, Piergiorgio Bertoli
10:30-11:00	<i>Coffee Break</i>
11:30-12:30	Session 10. Abstraction <ul style="list-style-type: none"> Efficiently handling temporal knowledge in an HTN planner, Luis Castillo, Juan Fdez-Olivares, Oscar Garcia-Perez, Francisco Palao Reinás Friends or Foes? An AI Planning Perspective on Abstraction and Search, Joerg Hoffmann, Ashish Sabharwal, Carmel Domshlak Metatheoretic Plan Summarization and Comparison, Karen Myers
12:30-14:00	<i>Lunch</i>
14:00-15:30	Session 11. Learning and mixed-initiative <ul style="list-style-type: none"> Explanation-Based Acquisition of Planning Operators, Geoffrey Levine, Gerald DeJong Feature Evaluation in Mixed-Initiative Systems: An Experimental Approach, Gabriella Cortellessa, Amedeo Cesta Learning Heuristic Functions from Relaxed Plans, Sungwook Yoon, Alan Fern, Robert Givan
15:30-16:00	<i>Coffee Break</i>
16:00-17:00	Session 12. Planning applications II <ul style="list-style-type: none"> An affectively driven planner for synthetic characters, Ruth Aylett, Joao Dias, Ana Paiva Bringing Users and Planning Technology Together. Experiences in SIADEX, Juan Fdez-Olivares, Luis Castillo, Oscar Garcia-Perez, Francisco Palao Reinás
17:00-18:00	Session 13. SAT-based planning <ul style="list-style-type: none"> Lemma Reusing for SAT based Planning and Scheduling, Hidetomo Nabeshima, Takehide Soh, Katsumi Inoue, Koji Iwanuma Structure and Problem Hardness: Goal Asymmetry and DPLL Proofs in SAT-Based Planning, Joerg Hoffmann, Carla Gomes, Bart Selman
18:00-18:15	Closing remarks