

Conference Scope

ECP is a major international conference for presentation of new research in AI Planning and Scheduling, and a fruitful opportunity for contact and cross-fertilization among the different "souls" in the field. It has taken place in Europe every other year since 1991. It has evolved very quickly from a restricted workshop mainly devoted to the presentation of European research to a well established conference devoted to the presentation of rigorous and innovative research results from the international community. The sixth ECP conference will take place in the center of historical Toledo, the very well known old Spanish city, crossing of many different cultures (Arabic, Jewish and Christian). ECP-01 would like to follow its established scientific tradition, also including events that highlight specific aspects of planning and scheduling research in the new millennium.

Topics of Interest

ECP-01 encourages submissions on any topic in the planning and scheduling domain. The papers, which should be original, innovative and of high technical quality, may concern, not exhaustively, any of the following topics:

- domain-independent planning
- planning and complexity
- planning and scheduling under uncertainty
- scheduling algorithms
- decision-theoretic planning and scheduling
- planning and reasoning about actions
- plan recognition
- planning and perception
- planning and learning
- knowledge engineering techniques for planning and scheduling
- planning and scheduling with complex domain models
- deductive planning
- model-theoretic approaches to planning
- constraint reasoning for planning and scheduling
- distributed and multi-agent planning and scheduling
- planning and execution
- reactive planning
- dynamic scheduling
- scalability in planning and scheduling
- mixed-initiative problem solving
- case-based planning
- robot planning
- applications of planning and scheduling
- planning, scheduling and the new information technology

Special Tracks

ECP-01 will include two special tracks that particularly testify to the current effort of the AI planning and scheduling community to create a bridge between labs and the real world. If sufficiently many good papers are submitted on these topics, they will be specially grouped within the regular sessions. There may also be discussion panels and/or invited talks on these topics. The special tracks are the following:

Planning, scheduling, and their integration:

In the last ten years, there has been increasing awareness of the importance of integrating planning and scheduling techniques. In fact such integration may create a useful premise for addressing very complex real problems (e.g., the control of various autonomous systems). At present examples of the integration exist in some software architectures but the understanding of the theoretical basis of this integration is at an early stage. Many relevant questions remain open, such as: the role of constraint-satisfaction techniques as the common root for such integration; the issue of interleaving planning and scheduling versus actually integrating them; the role that languages for describing the domain features play in planning and scheduling; and the analysis of the classes of problems where such integration is actually needed.

Plans, schedules and their robustness:

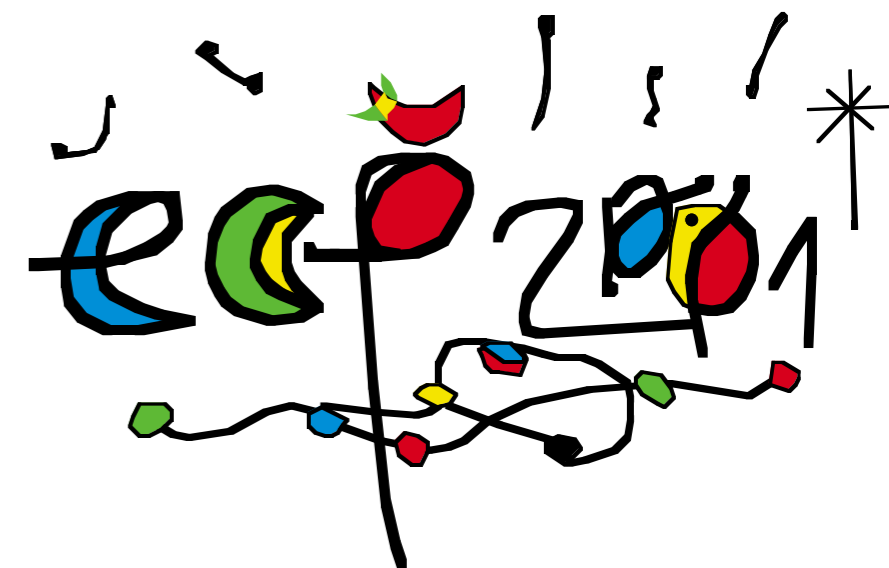
When considering the solution of a given planning/scheduling problem in isolation, a natural measure of solution quality is plan minimal length. When problem solving is performed within the broader perspective of a plan life-cycle, other metrics become relevant. One class of such metrics concerns plan robustness, where robustness might be broadly defined as the ability of a plan to be resistant to changes over its lifetime. The concept of robustness is implicitly contained in some current research but an explicitation of the problems it involves requires attention. We would like to create an opportunity for discussing issues related to plan/schedule robustness in the large, including the development of clear definitions of and evaluation metrics for robustness, the design of methods for producing "robust plans", clarification of the role of formal verification and validation in this concern, and comparison of the differences that may exist between robust planning and scheduling. The same standards will be applied to papers whether or not they are on the special topics.

Poster Presentations

- K. Subramani**
"Modeling Clairvoyance and Constraints in Real-time-Scheduling"
- A. Meier, C.P. Gomes, E.Melis**
"Randomization and Restarts in Proof Planning"
- I. Tsamadinou, M.E. Pollack, P. Ganchev**
Flexible Dispatch of Disjunctive Plans
- M. Beetz, T. Belker**
Learning Robot Action Plans for Controlling Continuous, Percept-driven Behavior
- A. Garrido, E. Onaindía, F. Barber**
Time-Optimal Planning in Temporal Problems
- P. Bertoli, A. Cimatti, M. Roveri**
Conditional Planning under Partial Observability as Heuristic-Symbolic Search in Belief Space
- C.H. Westerberg, J. Levine**
Optimising Plans using Genetic Programming
- D. Furcy, S. Koenig**
Combining Two Fast-Learning Real-Time Search Algorithms Yields Even Faster Learning
- D. S. Bernstein, S. Zilberstein**
Reinforcement Learning for Weakly-Coupled MDPs and an Application to Planetary Rover Control
- J. Argelich, R. Béjar, A. Cabiscol, C. Fernández, C.P. Gomes, F. Manyà**
Generating Hard Feasible Schedules
- J.D. Farquhar, C.J. Harris**
Beyond Plan Length: heuristic search planning for maximum reward problems

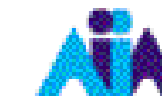
Demos

- K.L. Myers, P.A. Jarvis, T.J. Lee**
"CODA: Coordinating Human Planners"
- R.M. Simpson et al.**
"GIPO: An Integrated Graphical Tool to Support Knowledge Engineering in AI Planning"
- R. Sherwood, A. Mishkin, S. Chien, T. Estlin, P. Backes, B. Cooper, G. Rabideau, B. Engelhardt**
An Integrated Planning and Scheduling Prototype for Automated Mars Rover Command Generation
- S.Chien et al.**
A Demonstration of Robust Planning, Scheduling and Execution for the Techsat-21 Autonomous Sciencecraft Constellation
- A. Gerevini, L. Schubert**
DISCOPLAN: an Efficient On-line System for Computing Planning Domain Invariants



6th European Conference on Planning
(ECP-01)

Toledo, Spain
September 12-14, 2001



WEDNESDAY

SEPTEMBER 12, 2001

- 8:45-9:15 Registration
- 9:15-9:30 Opening
- 9:30-10:30 **Hector Geffner (Invited Speaker)**
- 10:30-11:20 Domain Independent Planning 1
D. Vrakas, I. Vlahavas
Combining Progression and Regression in State-Space Heuristic Planning
S. Edelkamp
Planning with Pattern Databases
- 11:20-11:50 Coffe Break
- 11:50-12:40 Domain Independent Planning 2
I.Razgon, R.I. Brafman
A Forward Search Planning Algorithm with a Goal Ordering Heuristic
J. Porteous, L. Sebastia, J. Hoffmann
On the Extraction, Ordering, and Usage of Landmarks in Planning
- 12:40-13:30 Analysis of Relevant Domains
W. Hatzack, B. Nebel
The Operational Traffic Control Problem: Computational Complexity and Solutions
J-P. Watson, J.C. Beck, A.E. Howe, L.D. Whitley
Toward an Understanding of Local Search Cost in Job-Shop Scheduling
- 13:30-15:00 Lunch
- 15:00-15:25 Planning and Information Retrieval
D. Camacho, D. Borrajo, J.M. Molina, R. Aler
Flexible Integration of Planning and Information Gathering
- 15:25-15:55 Benchmark Papers
S. Thiébaux, M-O. Cordier
Supply restoration in power distribution systems -- a benchmark for planning under uncertainty
B. Engelhardt, S. Chien, A. Barrett, J. Willis, C. Wilklow
The DATA-CHASER and Citizen Explorer Benchmark Problem Sets
- 15:55-16:15 Coffe Break
- 16:15-17:45 Concise Poster & Demo Plenary Presentations
- 17:45-19:15 Benchmark, Poster and Demo Session
Cocktail Party Sponsored by PLANET 2
- 21:00-22:30 Night guided visit in Toledo

THURSDAY

SEPTEMBER 13, 2001

- 9:30-10:30 Pascal Van Hentenryck (Invited Speaker)
- 10:30-11:20 P&S Integration 1
M.B. Do, S. Kambhampati
Sapa: A Domain-Independent Heuristic Metric Temporal
P. Haslum, H. Geffner
Heuristic Planning with Time and Resources
- 11:20-11:50 Coffe Break
- 11:50-12:40 P&S Integration 2
K.L. Myers S.F. Smith, D.W. Hildum, P.A. Jarvis, R. de Lacaze
Integrating Planning and Scheduling through Adaptation of Resource Intensity Estimates
B. Clement, A.C. Barrett, G.R. Rabideau, E.H. Durfee
Using Abstraction in Planning and Scheduling
- 12:40-13:30 HTN Planning
S. Biundo, B. Schattnerberg
From Abstract Crisis to Concrete Relief. A Preliminary report on flexible integration on nonlinear and hierarchical planning
L. Castillo, J. Fdez-Olivares, A. González
On the Adequacy of Hierarchical Planning Characteristics for Real-World Problem Solving
- 13:30-15:00 Lunch
- 15:00-15:50 Scheduling and Robustness
A.J. Davenport, C. Gefflot, J.C. Beck
Slack-based Techniques for Building Robust Schedules
B. Drabble and N. Haq
Dynamic Schedule Management: Lessons from the Air Campaign Planning Domain
- 15:50-16:10 Coffe Break
- 16:10-17:25 Constraint-based Tools for Supporting P&S
P. Laborie
Algorithms for Propagating Resource Constraints in AI Planning and Scheduling: Existing Approaches and New Results
R. Trinquart, M. Ghallab
An Extended Functional Representation in Temporal Planning: Towards Continuous Change
A. Oddi
Constraint-Based Strategies for the Disjunctive Temporal Problem: Some New Results
- 17:25-18:00 Discussion on planning competition
Evening: ECP Social Dinner

FRIDAY

SEPTEMBER 14, 2001

- 9:30-10:30 Vladimir Lifschitz (Invited Speaker)
- 10:30-11:30 Planning in Non Deterministic Domains 1
C. Castellini, E. Giunchiglia, A. Tacchella
Improvements to SAT-based conformant planning
M. Pistore, R. Bettin, P. Traverso
Symbolic techniques for planning with extended goals in non-deterministic domains
- 11:30-11:50 Coffe Break
- 11:50-12:40 Planning in Multi-Agent Domains
R.M. Jensen, M.M. Veloso, M.H. Bowling
OBDD-Based Optimistic and Strong Cyclic Adversarial Planning
C. Domshlak, Y. Dinitz
Multi-Agent Off-Line Coordination: Structure and Complexity
- 12:40-13:30 Planning in Non Deterministic Domains 2
Z. Feng, E.A. Hansen
Approximate Planning for Factored POMDPs
W. Zhang
Solving Informative POMDPs
- 13:30-15:00 Lunch
- 15:00-15:50 Domain Independent Planning 3
Y. Dimopoulos
Improved Integer Programming Models and Heuristic Search fo AI Planning
J. Hoffmann, B. Nebel
RIFO Revisited: Detecting Relaxed Irrelevance
- 15:50-16:10 Coffe Break
- 16:10-17:00 Domain Independent Planning 4
M. Shanahan
Using Reactive Rules to Guide a Forward-Chaining Planner
M. Helmert
On the Complexity of Planning in Trasportation Domains
- 17:00-17:15 Closing Session

