

Andrea Orlandini's Short CV

1 Personal Data

- Date of Birth: 11 September 1973
- Place of Birth: Viareggio (Lucca - Italy)
- Nationality: Italian
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- Languages:
 - Italian (mothertongue)
 - English (good written and spoken)
 - French (basic written and spoken)

2 Position

Ph.D. student in Computer Science at the University of Rome "Roma TRE".
The expected date of thesis discussion is April 2006.

3 Education

- March 2002. "Laurea" in Computer Science Engineering at the University of Rome "Roma TRE", defending the thesis: "Pianificazione mediante ricerca di modelli in logica temporale lineare" (Planning as model search in linear temporal logic). Rating: 104/110. Advisor: Marta Cialdea Mayer, Prof. of Artificial Intelligence.

4 Research Interests

- Logic
 - Linear Temporal Logic.
 - Parallel algorithms for LTL tableaux calculus.
 - Efficient data structures for the representation of logic formulae.
- Automated Planning
 - "Planning as satisfiability" approach for both classical and contingency planning, exploiting temporal logic tableaux calculus.
 - Specification languages for planning domain.
 - Reactive planning and execution control.
 - "Mixed-Initiative planning" approach.
- Robotic system
 - Rescue Scenarios and Rescue Robots.

The PhD activity was focused on two main directions:

- The extension of the "planning as satisfiability" approach to LTL is proposed. In this sense, we developed a planner, Pdk (Planning with Domain Knowledge), that encodes a planning problem into a set of LTL formulae. Planning is performed as model search by means of LTL tableaux calculus and a model corresponds to a solution plan of the problem.
- The design and implementation of a control architecture for rescue robots. We exploit a model-based control approach and we deploy our system with a proactive behavior, in order to generate flexible interval plans, and a reactive behavior, in order to manage dynamic changes of the world during execution. In this context, we model both the autonomous and the human operator's activities and we define some hybrid "mixed-initiative" operative modalities between autonomous and teleoperated modes. This architecture has been used during the RoboCup Real Rescue Competitions obtaining good results (third award winner in 2004 and up to semifinals in 2005).

5 Participation to Research Projects

- 2002 "ARISCOM: A reconfigurable architecture for the continuous support to mission planning and management" financed from ASI (Italian Space Agency).
- 2003-2005 "Simulation and robotic systems for operations in emergency scenarios" financed from MIUR (Italian Ministry of Education, University and Research).

6 Publications

- International Conferences
 - “Pdk: the system and its language.“, M. Cialdea, C. Limongelli, A. Orlandini, V. Poggioni; In Proc. of International Conference TABLEAUX, Automated Reasoning with Analytic Tableaux and Related Methods. LNAI 3702 - Springer Verlag, Beckert B. Eds. ISBN 3-540-28931-3. 2005.
 - “Augmenting Situation Awareness via Model-Based Control in Rescue Robots“, A. Carbone, A. Finzi, A. Orlandini, F. Pirri, G. Ugazio; In Proc. of IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS). ISBN 0-7803-8913-1. 2005.
 - “Planning with Graded Fluents and Actions“, V.Poggioni, M. Cialdea, C. Limongelli, A. Orlandini; In Proc. of International Joint Conference on Artificial Intelligence. Leslie Pack Kaelbling and Alessandro Saffiotti Eds. 2005.
 - “A Parallel Computation Technique for Linear Time Logic Tableaux“, C. Limongelli, A. Orlandini, V. Poggioni; In M. Cialdea Mayer, F. Pirri, Tableaux 2003, Position Papers and Tutorials Aracne Eds. 2003.
 - “A Planner Fully Based on Linear Temporal Logic“, M. Cialdea, A. Orlandini, C. Limongelli, G. Balestreri. In Proc. of 5th International Conference on Artificial Intelligence, Planning and Scheduling (AIPS 2000), S. Chien, S. Kambhampati and C. A. Knoblock Eds., pages 347-354. AAAI Press. 2000.
- National Conferences
 - “Human-Robot Interaction through Mixed-Initiative Planning for Rescue and Search Rovers“, A. Finzi and A. Orlandini; In Proc. of 9th Congress of the Italian Association for Artificial Intelligence Intelligence. LNAI 3673, Bandini S., Manzoni S. (Eds.) 2005, XIV, ISBN 3-540-29041-9.
 - “Planning with Graded Fluents and Actions“, V. Poggioni, M. Cialdea, C. Limongelli, A. Orlandini; Lecture Notes of Workshop on Planning and Scheduling, AI*IA 2004 Congress.
 - “Towards a Parallel Search Engine for Planning Systems Based on Linear Logic“, M. Cialdea, C. Limongelli, A. Orlandini, V. Poggioni; Lecture Notes of Workshop on Planning and Scheduling, AI*IA 2004 Congress.
 - “Planning under Uncertainty in Linear Time Logic“, M. Cialdea, C. Limongelli, A. Orlandini, V. Poggioni; In Proc. of AI*IA 2003: Advances in Artificial Intelligence. A. Cappelli, F. Turini (eds.), LNAI 2829, pages 324-335, Springer, 2003.

- National Journals
 - “A Proposal for Planning with graded fluents and actions”, V. Poggioni, M. Cialdea, C. Limongelli, A. Orlandini; To appear in “Intelligenza Artificiale”. ISSN 1724-8035.
- Workshops
 - “Situation Awareness Rescue Robots”, A. Carbone, A. Finzi, A. Orlandini; F. Pirri, G. Ugazio; In Proc. of IEEE International Workshop on Safety, Security and Rescue Robotics (SSRR). pp. 240-246. 2005.
 - “A Mixed-Initiative Approach to Human-Robot Interaction in Rescue Scenarios”, A. Finzi and A. Orlandini. In Printed Notes of Workshop on Mixed-Initiative Planning And Scheduling (ICAPS 05). pp. 36-43. 2005.
 - “The Main Features of a Planner Fully Based on LTL“, M. Cialdea, C. Limongelli, A. Orlandini, G. Balestreri; Printing of Workshop on Model Theoretic Approaches to Planning, AIPS 2000.
- International Newsletters
 - “Contingency Planning in LTL”; A. Orlandini; In PLANET Newsletter. Issue 8. pp. 21-28. 2004. ISSN 1610-0204.
- Others
 - “RoboCupRescue - Robot League Team ALCOR”, A. Carbone, A. Finzi, A. Orlandini, F. Pirri, G. Ugazio. Team Description Paper. In Electronic Proceedings of RoboCup 2005.
 - “RoboCupRescue - Robot League Team ALCOR”, A. Carbone, G. Ugazio, A. Finzi, F. Pirri, M. Cialdea, M. Iarusso, A. Orlandini; Team Description Paper. In Electronic Proceedings of RoboCup 2004.
 - “Contingency Planning in LTL“, A. Orlandini; Printing of Doctoral Consortium (ICAPS) 2003.

Rome, 29 November 2005

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