

# Ethan Burns

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- Research Interests** Artificial intelligence, especially heuristic search, planning and optimization.
- Education**
- UNIVERSITY OF NEW HAMPSHIRE Ph.D. in Computer Science, expected 2013  
Advisor: Wheeler Ruml.  
Attended the ICAPS Summer School on Automated Planning and Scheduling, 2009.
- UNIVERSITY OF NEW HAMPSHIRE M.S in Computer Science, 2008  
Thesis: *Implementation and Comparison of iSCSI Over RDMA*. Advisor: Robert Russell.
- UNIVERSITY OF NEW HAMPSHIRE B.S. in Computer Science, 2006
- Honors**
- UNH Graduate School Dissertation Year Fellowship 2012  
Richard Lyczak Memorial Teaching Award for the best department TA 2007
- Professional Experience**
- PALO ALTO RESEARCH CENTER  
*Visiting Researcher* August 2011–present  
Continued collaboration with Rong Zhou on parallel search techniques for model checking.
- Intern* June 2011–August 2011  
Research with Rong Zhou on parallel search techniques for model checking, including the implementation of parallel search algorithms in the Spin model checker.
- UNIVERSITY OF NEW HAMPSHIRE  
*Research Assistant* September 2008–present  
Research in heuristic search, including: parallel heuristic search for multi-core computers, disk-base heuristic search, search for optimization problems and learning in heuristic search.
- UNIVERSITY OF NEW HAMPSHIRE INTEROPERABILITY LAB  
*Software Engineer* June 2003–September 2008  
Testing and software development for IPv4 routing and IPv6 security. Development of an iSER back-end for the UNH-iSCSI Linux kernel module to allow for direct access of the memory on a remote computer over a 10 gigabit Ethernet or Infiniband network.
- Refereed Journal Publication** Ethan Burns, Sofia Lemons, Wheeler Ruml and Rong Zhou, “Best-First Heuristic Search for Multicore Machines,” *Journal of Artificial Intelligence Research*, volume 39, pages 689-743, 2010.
- Refereed Conference Publications**
- Ethan Burns, J. Benton, Wheeler Ruml, Minh Do and Sungwook Yoon, “Anticipatory On-line Planning,” *Proceedings of the Twenty-second International Conference on Automated Planning and Scheduling (ICAPS-12)*, 2012.
- Scott Kiesel, Ethan Burns, Christopher Wilt and Wheeler Ruml, “Integrating Vehicle Routing and Motion Planning,” *Proceedings of the Twenty-second International Conference on Automated Planning and Scheduling (ICAPS-12)*, 2012.
- Ethan Burns and Wheeler Ruml, “Iterative-Deepening Search with On-line Tree Size Prediction,” *Proceedings of the Sixth International Conference on Learning and Intelligent Optimization (LION-12)*, 2012. Also appeared as University of New Hampshire Computer Science Technical Report 11-01.

Matthew Hatem, Ethan Burns and Wheeler Ruml, “Heuristic Search for Large Problems With Real Costs,” *Proceedings of the Twenty-fifth AAAI Conference on Artificial Intelligence (AAAI-11)*, 2011.

Bradford Larsen, Ethan Burns, Wheeler Ruml and Robert C. Holte, “Search Without a Heuristic: Efficient Use of Abstraction,” *Proceedings of the Twenty-fourth AAAI Conference on Artificial Intelligence (AAAI-10)*, 2010.

Ethan Burns, Seth Lemons, Rong Zhou and Wheeler Ruml, “Suboptimal and Anytime Heuristic Search Search on Multi-Core Machines,” *Proceedings of the Seventeenth International Conference on Automated Planning and Scheduling (ICAPS-09)*, 2009.

Ethan Burns, Seth Lemons, Rong Zhou and Wheeler Ruml, “Best-First Heuristic Search for Multi-Core Machines,” *Proceedings of the Twenty-first International Joint Conference on Artificial Intelligence (IJCAI-09)*, 2009.

### Refereed Workshop Publications

Ethan Burns and Rong Zhou, “Parallel Model Checking Using Abstraction,” *Proceedings of the Nineteenth International SPIN Workshop on Model Checking of Software (SPIN-12)*, 2012.

Kevin Rose, Ethan Burns, and Wheeler Ruml, “Best-first Search for Bounded-depth Trees,” *Proceedings of the Symposium on Combinatorial Search (SoCS-11)*, 2011.

Ethan Burns, Sofia Lemons, Wheeler Ruml and Rong Zhou, “Parallel Best-First Search: The Role of Abstraction,” *Proceedings of the AAAI-10 Workshop on Abstraction, Reformulation and Approximation (WARA-10)*, 2010.

Ethan Burns, Seth Lemons, Wheeler Ruml and Rong Zhou, “Parallel Best-First Search: Optimal and Suboptimal Solutions,” *Proceedings of the International Symposium on Combinatorial Search (SoCS-09)*, 2009.

Ethan Burns and Robert Russell, “Implementation and Evaluation of iSCSI Over RDMA,” *Proceedings of Fifth IEEE International Workshop on Storage Network Architecture and Parallel I/Os (SNAPI-08)*, 2008.

### Unrefereed Publication

Scott Kiesel, Ethan Burns, and Wheeler Ruml, “Abstraction-guided Sampling for Motion Planning”, *University of New Hampshire Technical Report 12-01*, 2012.

### Teaching Experience

UNIVERSITY OF NEW HAMPSHIRE

*Graduate Teaching Assistant*

Algorithms (undergrad, grad) Fall 2010

Introduction to Artificial Intelligence (undergrad, grad) Spring 2009

Object-oriented Methodology (undergrad, grad) Fall 2006, 2007; Spring 2007, 2008

### Professional Activities

*Journal Reviewing (Auxiliary Reviewer)*

Advances in Artificial Intelligence 2011

Artificial Intelligence 2010

Journal of Artificial Intelligence Research 2010

*Conference Reviewing*

Association for the Advancement of Artificial Intelligence 2012

Learning and Intelligent Optimization 2009-2010

*Conference Reviewing (Auxiliary Reviewer)*

European Conference on Artificial Intelligence 2012

Florida Artificial Intelligence Research Society Conference 2010

*Software systems*

Maintainer of the SPT simple plotting tool for Objective Caml. 2010-present

Maintainer of the UNH-iSCSI Linux kernel driver. 2007-2008

**Membership** Association for the Advancement of Artificial Intelligence  
Association for Computing Machinery