

# Nicholas K. Jong

nkj@cs.utexas.edu  
(512) 417-5573

5107 Leralynn Street  
Apartment 201  
Austin, Texas 78751-1938

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## Education

- **The University of Texas at Austin** Austin, TX
  - Ph.D. program, Computer Sciences Department, August 2002 - Summer 2009 (expected)
  - Research Advisor: Peter Stone
  - GPA: 3.89 / 4.00
- **Carnegie Mellon University** Pittsburgh, PA
  - B.S. in Computer Science and Psychology, May 2002
  - GPA: 3.93 / 4.00

## Research Interests

**Machine learning:** representations and algorithms that bridge the gap between raw data and deep structure, specializing in reinforcement learning

**Autonomous agents:** software architecture for agents, such as robots and autonomic computer systems, that must adapt automatically and robustly to complex environments

## Appointments

- **Graduate Research Assistant** Fall 2002 - Present  
University of Texas at Austin Austin, TX
- **Assistant Instructor** Fall 2007 - Fall 2008  
University of Texas at Austin Austin, TX
- **Research Intern** Summer 2005  
IBM T.J. Watson Research Center Hawthorne, NY
- **Teaching Assistant** Fall 2002, Spring 2003, and Spring 2004  
University of Texas at Austin Austin, TX
- **Undergraduate Research Assistant** Summer 2001 and Summer 2002  
Carnegie Mellon University Pittsburgh, PA
- **Software Engineering Intern** Summer 2000  
Claritech Corporation Pittsburgh, PA

## Teaching Experience

- **Assistant Instructor** Fall 2007 - Fall 2008  
University of Texas at Austin Austin, TX
  - CS 105 *Computer Programming: Perl*, Fall 2008. Instructor rating: 4.0/5.0
  - CS 105 *Computer Programming: Perl*, Spring 2008. Instructor rating: 4.3/5.0
  - CS 105 *Computer Programming: Perl*, Fall 2007. Instructor rating: 4.7/5.0

- **Teaching Assistant**  
University of Texas at Austin

Fall 2002, Spring 2003, and Spring 2004  
Austin, TX

- CS 343 *Artificial Intelligence*, Spring 2004.
- CS 302 *Computer Fluency*, Spring 2003.
- CS 378 *History of Computing*, Fall 2002.

## Professional Service

### Conference Program Committees

- International Joint Conferences on Artificial Intelligence (IJCAI), 2009
- International Conference on Machine Learning (ICML), 2006-2007 and 2009
- National Conference on Artificial Intelligence (AAAI), 2005-2007

### Journal Reviews

- Artificial Intelligence Journal (AIJ)
- Journal of Machine Learning Research (JMLR)
- Journal of Autonomous Agents and Multi-Agent Systems (JAAMAS)

### Departmental Service

- Co-organizer of the Forum for Artificial Intelligence seminar series, 2004-2008

## Publications

### Journal Articles

- Gerald Tesauro, **Nicholas K. Jong**, Rajarshi Das, and Mohamed N. Bennani. **On the Use of Hybrid Reinforcement Learning for Autonomic Resource Allocation**. *Cluster Computing*, 10(3):287-99, September 2007.
- Peter Stone, Mohan Sridharan, Daniel Stronger, Gregory Kuhlmann, Nate Kohl, Peggy Fiedelman, and **Nicholas K. Jong**. **From Pixels to Multi-Robot Decision Making: A Study in Uncertainty**. *Robotics and Autonomous Systems*, 54(11):933-43, November 2006. Special issue on Planning Under Uncertainty in Robotics.
- Peter Stone, Kurt Dresner, Selim T. Erdogan, Peggy Fiedelman, **Nicholas K. Jong**, Nate Kohl, Gregory Kuhlmann, Ellie Lin, Mohan Sridharan, Daniel Stronger, and Gurushyam Hariharan. **UT Austin Villa 2003: A New RoboCup Four-Legged Team**. In Daniel Polani, Brett Browning, Andrea Bonarini, and Kazuo Yoshida, editors, *RoboCup-2003: Robot Soccer World Cup VII*, Springer Verlag, Berlin, 2004.

### Conference Papers

- Matthew E. Taylor, **Nicholas K. Jong**, and Peter Stone. **Transferring Instances for Model-Based Reinforcement Learning**. In *Proceedings of the European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD)*, September 2008.
- **Nicholas K. Jong** and Peter Stone. **Hierarchical Model-Based Reinforcement Learning: R-max + MAXQ**. In *Proceedings of the Twenty-Fifth International Conference on Machine Learning (ICML)*, July 2008.

- **Nicholas K. Jong**, Todd Hester, and Peter Stone. **The Utility of Temporal Abstraction in Reinforcement Learning**. In *The Seventh International Joint Conference on Autonomous Agents and Multiagent Systems*, May 2008.
- **Nicholas K. Jong** and Peter Stone. **Model-Based Exploration in Continuous State Spaces**. In *The Seventh Symposium on Abstraction, Reformulation, And Approximation (SARA)*, July 2007.
- **Nicholas K. Jong** and Peter Stone. **Model-Based Function Approximation for Reinforcement Learning**. In *Proceedings of the Sixth International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, May 2007.
- Gerald Tesauro, **Nicholas K. Jong**, Rajarshi Das, and Mohamed N. Bennani. **Improvement of Systems Management Policies Using Hybrid Reinforcement Learning**. In *Proceedings of the Seventeenth European Conference on Machine Learning (ECML)*, September 2006.
- Gerald Tesauro, **Nicholas K. Jong**, Rajarshi Das, and Mohamed N. Bennani. **A Hybrid Reinforcement Learning Approach to Autonomic Resource Allocation**. In *Proceedings of the Third IEEE International Conference on Autonomic Computing (ICAC)*, June 2006.
- **Nicholas K. Jong** and Peter Stone. **State Abstraction Discovery From Irrelevant State Variables**. In *Proceedings of the Nineteenth International Joint Conference on Artificial Intelligence (IJCAI)*, August 2005.
- Patrick Beeson, **Nicholas K. Jong**, and Benjamin Kuipers. **Towards Autonomous Place Detection Using the Extended Voronoi Graph**. In *IEEE International Conference on Robotics and Automation (ICRA)*, April 2005.
- Satinder Singh, Michael L. Littman, **Nicholas K. Jong**, David Pardoe, and Peter Stone. **Learning Predictive State Representations**. In *Proceedings of the Twentieth International Conference on Machine Learning (ICML)*, August 2003.

#### Refereed Workshop Papers

- Gerald Tesauro, Rajarshi Das, and **Nicholas K. Jong**. **Online Performance Management Using Hybrid Reinforcement Learning**. In *Proceedings of the First Workshop on Tackling Computer Systems Problems with Machine Learning Techniques*, June 2006.
- **Nicholas K. Jong** and Peter Stone. **Kernel-Based Models for Reinforcement Learning in Continuous State Spaces**. In *The ICML Workshop on Kernel Machines and Reinforcement Learning*, June 2006.
- **Nicholas K. Jong** and Peter Stone. **Bayesian Models of Nonstationary Markov Decision Problems**. In *The IJCAI Workshop on Planning and Learning in A Priori Unknown or Dynamic Domains*, August 2005.
- **Nicholas K. Jong** and Peter Stone. **Towards Learning to Ignore Irrelevant State Variables**. In *The AAI-2004 Workshop on Learning and Planning in Markov Processes—Advances and Challenges*, July 2004.

#### Personal

- Citizenship: U.S.
- Hobbies: cooking, gaming, running