

Jonathan K. Scholz

CONTACT INFORMATION

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RESEARCH INTEREST

Robot manipulation in unknown and/or uncertain environments.
Markov Decision Processes and Reinforcement Learning
Bayesian Modelling and Inference
Dynamics and manipulation planning

EDUCATION

Georgia Institute of Technology, Atlanta, Georgia USA

Ph.D. Student, Computer Science (Robotics & Machine Learning) **August 2008 – Present**
Advised by Drs. Charles Isbell & Mike Stilman

Franklin & Marshall College, Lancaster, Pennsylvania USA

B.A., Neuroscience; Minor, Music **December 2005**
Advised by Prof. Robert N. Jinks

RESEARCH EXPERIENCE

Georgia Institute of Technology, Atlanta, Georgia USA

Graduate Research

Physics-Based Reinforcement Learning **Fall 2010 – present**
Prof. Charles Isbell, College of Computing

Robot Task Planning

Fall 2008 – Spring 2010
Prof. Mike Stilman, College of Computing

Massachusetts Institute of Technology, Cambridge, Massachusetts USA

Research Assistant in Neuroimaging and Social Cognition **Spring 2006 – Spring 2008**
Prof. Rebecca Saxe, Brain & Cognitive Sciences

Visiting Researcher: Computational Cognitive Science Group

Spring 2012
Dr. David Wingate & Prof. Joshua Tenenbaum, Brain & Cognitive Sciences

Franklin & Marshall College, Lancaster, Pennsylvania USA

Research Assistant: Calcium dysregulation in Alzheimer's Disease **Fall 2005**
Prof. Robert N. Jinks, Invertebrate Visual Neuroscience Laboratory, Biology

Research Assistant: Molecular signaling in invertebrate vision

Spring 2005
Prof. Robert N. Jinks, Invertebrate Visual Neuroscience Laboratory, Biology

PROFESSIONAL EXPERIENCE

Willow Garage, Menlo Park, California USA

Mobile Manipulation with a Humanoid Robot **Summer 2010**
Dr. Bhaskara Marthi & Dr. Sachin Chitta

Google Inc., Mountain View, California USA

MCMC Inference for Large-Scale Regression Models **Summer 2012**
Dr. Edward Wu (Google LAX)

TEACHING
EXPERIENCE

Robot Intelligent Planning (TA for Prof. Mike Stilman)	Fall 2009
Machine Learning (TA for Prof. Charles Isbell)	Spring 2011
Machine Learning (Co-Taught with Pushkar Kolhe)	Summer 2013

PUBLICATIONS

1. **Scholz J., Levihn, M., Isbell, C.**, “A Physics Based Model Prior for Object Oriented MDPs” *ICML (2014)*
2. **Griffith, S., Subramanian, K., Scholz, J., Isbell, C., and Thomaz, A.**, “Policy Shaping- Integrating Human Feedback with Reinforcement Learning” *NIPS (2013)*
3. **Levihh, M., Scholz J., Stilman, M.**, “Planning with Movable Obstacles in Continuous Environments with Uncertain Dynamics” *ICRA (2013)*
4. **Scholz J., Levihn, M., Isbell, C.**, “What Does Physics Bias: A Comparison of Model Priors for Robot Manipulation” *RLDM (2013)*
5. **Levihh, M., Scholz, J., Stilman, M.**, “Hierarchical decision theoretic planning for navigation among movable obstacles” *WAFR (2012)*
6. **Scholz, J., Stilman, M.**, “Combining Motion Planning and Optimization for Flexible Robot Manipulation” *Humanoids (2010)* Best Student Paper Award
7. **Scholz, J., Chitta, S., Marthi, B., Likhachev, M.**, “Cart pushing with a mobile manipulation system: Towards navigation with moveable objects” *IROS (2010)*
8. **Scholz, J., Triantafyllou, C., Whitfield-Gabrieli, S., Brown, EN., Saxe, R.**, “Distinct regions of right temporo-parietal junction are selective for theory of mind and exogenous attention” *PLOS-One (2009)*
9. **Young, L., Scholz, J., Saxe., R.**, “Neural evidence for intuitive prosecution: The use of mental state information for negative moral verdicts” *Social Neuroscience (2011)*
10. **Saxe, R., Whitfield-Gabrieli, S., Scholz, J., Pelphrey, K.**, “Brain Regions for Perceiving and Reasoning about Other People in School-aged Children” *Child Development (2008)*
11. **Kliemann, D., Young, L., Scholz, J., Saxe, R.**, “The influence of prior record on moral judgement” *Neuropsychologia (2008)*
12. **Saxe, R., Moran, J., Scholz, J., Gabrieli J.**, “Overlapping and non-overlapping brain regions for theory of mind and self reflection in individual subjects” *Social Cognitive and Affective Neuroscience (2006)*

HONORS AND
AWARDS

NSF Graduate Research Fellowship - Honorable Mention	2009
Best Student Paper - Humanoids	2010