

Jonathan K. Scholz

CONTACT INFORMATION

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EDUCATION

Georgia Institute of Technology, Atlanta, Georgia USA

Ph.D. Student, Computer Science

August 2008 – Present

Machine Learning, advised by Drs. Charles Isbell & Mike Stilman

Franklin & Marshall College, Lancaster, Pennsylvania USA

B.A., Neuroscience; Minor, Music

December 2005

Invertebrate Visual Neuroscience, advised by Dr. Robert N. Jinks
Cum Laude

ACADEMIC EXPERIENCE

Georgia Institute of Technology, Atlanta, Georgia USA

Research

Structure Discovery in Reinforcement Learning

Fall 2010 – present

Advised by Prof. Charles Isbell, College of Computing

- Partial policy heuristics for Monte-carlo Tree Search (MCTS)
- MCMC policy search

Perception and control for robot manipulation

Fall 2008 – Spring 2010

Advised by Prof. Mike Stilman, College of Computing

- Model-based motion planning for task-level optimization
- Object classification from haptic data with 7-DOF robot hand
- Stochastic Navigation Among Movable Obstacles (NAMO)

Teaching

Robot Intelligent Planning (Prof. Mike Stilman)

Fall 2009

- Grader, Recitation

Machine Learning (Prof. Charles Isbell)

Spring 2011

- Lecturer, Grader

Graduate Coursework

- Statistics, Machine Learning, Probabilistic Graphical Models
- Task and Motion Planning, Computer Vision

Massachusetts Institute of Technology, Cambridge, Massachusetts USA

Research Assistantship: Neuroimaging and Social Cognition

Spring 2006 – Spring 2008

Dr. Rebecca Saxe, Brain & Cognitive Sciences

- fMRI data collection & analysis
- Psychophysical and behavioral experiments with adults
- System administration & scripting for data analysis (Athena Linux)

Franklin & Marshall College, Lancaster, Pennsylvania USA

Research Collaborative: Calcium dysregulation in Alzheimer's Disease

Fall 2005

Dr. Robert N. Jinks, Invertebrate Visual Neuroscience Laboratory, Biology

- Protein separation assays with SDS-PAGE
- In-vitro neuropharmacology and tissue fixation

Research Assistantship: Molecular signaling in invertebrate vision

Spring 2005

Dr. Robert N. Jinks, Invertebrate Visual Neuroscience Laboratory, Biology

- Western Blots for protein identification
- Surgical treatment & fixation of *limulus* eye

PROFESSIONAL
EXPERIENCE

Willow Garage, Menlo Park, California USA

Summer 2010

Mobile Manipulation with a Humanoid Robot

Advised by Dr. Bhaskara Marthi & Dr. Sachin Chitta

PUBLICATIONS

1. **Scholz, J., Stilman, M.**, “Combining Motion Planning and Optimization for Flexible Robot Manipulation” *Humanoids (2010)* Best Student Paper Award
2. **Scholz, J., Chitta, S., Marthi, B., Likhachev, M.**, “Cart pushing with a mobile manipulation system: Towards navigation with moveable objects” *IROS (2010)*
3. **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)*
4. **Young, L., Scholz, J., Saxe., R.**, “Neural evidence for intuitive prosecution: The use of mental state information for negative moral verdicts” *Social Neuroscience (2011)*
5. **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)*
6. **Kliemann, D., Young, L., Scholz, J., Saxe, R.**, “The influence of prior record on moral judgement” *Neuropsychologia (2008)*
7. **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
Best Student Paper - Humanoids

2009
2010

CONFERENCES /
TALKS

“Combining Motion Planning and Optimization for Flexible Robot Manipulation” (Spotlight presentation: Humanoids Conference, December 2010, Nashville, TN)

“Methods of Interacting with Mobile Objects using a Humanoid Robot Arm” (Poster presentation: Georgia Tech Grad-symposium, December 2009, Atlanta, GA)

“Distinct regions of right temporo-parietal junction are selective for theory of mind and exogenous attention” (Poster presentation: CNS Annual Meeting, May 2008, San Francisco, CA)

“True or False- the RTPJ responds to task relevant beliefs” (Poster presentation; SAN Annual Meeting, June 2008, Boston, MA)

MEMBERSHIPS /
ACTIVITIES

- IEEE member (2009-2011)
- Society for Neuroscience (2005)
- Cognitive Neuroscience Society (2007-2008)

EXTRA

I spent three summers during college building a Factory Five Cobra replicar from a junked Ford Mustang. In graduate school I've designed two Arduino AtMega-based controllers for RC vehicles, include a helicopter and a car. In my spare time I also enjoy playing piano, basketball, and ultimate frisbee, as well as sailing and going swing dancing.

REFERENCES

- **Dr. Charles Isbell** *Associate Professor of Computer Science*
email: isbell@cc.gatech.edu
- **Dr. Mike Stilman** *Assistant Professor of Computer Science*
email: mstilman@cc.gatech.edu
- **Dr. Rebecca Saxe** *Assistant Professor of Cognitive Neuroscience*
email: saxe@mit.edu