

## Shun Zhang

---

CONTACT INFORMATION	Department of Computer Science The University of Texas at Austin 1 University Station A8000 Austin, TX 78712	512-574-3694 jensen.zhang@utexas.edu
RESEARCH INTERESTS	Reinforcement learning, robotics, theoretical machine learning, human cognition.	
EDUCATION	<b>University of Texas at Austin</b> , Austin, TX  Integrated B.S./M.S. Program, <b>Computer Science</b> , Jan 2012 - May 2015 (Expected) <ul style="list-style-type: none"><li>• Major G.P.A 3.8. Overall G.P.A 3.55.</li><li>• <b>Master Thesis</b> with Prof. Peter Stone.</li></ul> <b>Nanjing University of Aeronautics and Astronautics</b> , Nanjing, China  Undergraduate program, Computer Science and Technology, Sep 2009 - Dec 2011 <ul style="list-style-type: none"><li>• G.P.A. 88/100.</li><li>• Transferred to University of Texas at Austin in Jan. 2012.</li></ul>	
RESEARCH EXPERIENCE	<b>Representation Learning in Reinforcement Learning</b> Department of Computer Science University of Texas at Austin	Fall 2014-Spring 2015
	<ul style="list-style-type: none"><li>• Supervisor: Prof. <b>Peter Stone</b>.</li><li>• Research question: <i>Reinforcement Learning requires abstraction for large-scale problems. Examples are feature extraction and hiarachical learning. Can the learning agent learn such abstraction on the fly?</i></li><li>• In progress for Master Thesis.</li></ul>	
	<b>Modular Reinforcement Learning</b> Department of Computer Science and Center for Perceptual Systems University of Texas at Austin	Fall 2014
	<ul style="list-style-type: none"><li>• Supervisor: Prof. <b>Dana Ballard</b> and Prof. <b>Mary Hayhoe</b>.</li><li>• Research question: <i>Assume human already has Markov Decision Processes (MDP) trained for preliminary tasks, how would these MDPs contribute to the complicated behavior?</i></li><li>• Using Inverse Reinforcement Learning to interpret human's behavior, assuming that it is a combination of the MDPs for preliminary tasks.</li></ul>	
	<b>Determining Placements of Influencing Agents in a Flock</b> Department of Computer Science University of Texas at Austin	Fall 2014
	<ul style="list-style-type: none"><li>• Supervisor: Prof. <b>Peter Stone</b>.</li><li>• Research question: <i>Where should influencing agents be initially located within a flock to maximize their influence on the flock?</i></li><li>• Using MASON simulator to evaluate different placements, including border of the flock, grid positions, graph-based positions in the flock.</li><li>• Paper in preparation: Determining Placements of Influencing Agents in a Flock. Katie Genter, Shun Zhang and Peter Stone.</li></ul>	
	<b>Action Selection in Robotic Motion Learning</b> Department of Computer Science University of Texas at Austin	Fall 2013

- Supervisor: Prof. [Peter Stone](#).
- Research question: *Instead of uniformly randomly selecting actions to try, can a robot explicitly select actions to explore its belief state space?*
- Implementing ASAMI (a model-learning algorithm) on Nao robot using bandit-based exploration.
- Archived in Undergraduate Research Journal in University of Texas at Austin, 2014.

### Semi-Autonomous Intersection Management

Summer, Fall 2012

Department of Computer Science  
University of Texas at Austin

- Supervisor: Prof. [Peter Stone](#) and Prof. [Tsz-Chiu Au](#).
- Research question: *Can we find a policy better than traffic signals, if human-driven, semi-autonomous and fully-autonomous vehicles are sharing the road?*
- Designing and evaluating a policy that is competent with all three types of vehicles, and performs better than traffic signals.
- Related publication: Semi-Autonomous Intersection Management (Extended Abstract). Tsz-Chiu Au, Shun Zhang, and Peter Stone. Autonomous Agents and Multiagent Systems (AAMAS), 2014.

### PUBLICATIONS

1. Tsz-Chiu Au, **Shun Zhang**, and Peter Stone. Semi-Autonomous Intersection Management (Extended Abstract). Autonomous Agents and Multiagent Systems (AAMAS), 2014.

### PAPERS IN PREPARATION

1. Katie Genter, **Shun Zhang**, and Peter Stone. Determining Placements of Influencing Agents in a Flock.

### AWARDS

Student Awards — University of Texas at Austin

- hold

time

### PRESENTATIONS

Statistical Meetings

- hold

time

### TEACHING EXPERIENCE

**Undergraduate Teaching Assistant (Proctor)**  
CS 301K Foundations of Logical Thought  
with Dr. Jacob Schrum  
Department of Computer Science,  
University of Texas at Austin

Fall 2013, Spring 2014

### INDUSTRIAL EXPERIENCE

**SDE Intern at Amazon**  
Seattle, WA

Summer 2014

**SDE Intern at Semantic Designs**  
Seattle, WA

Summer 2013

- Supervisor: Dr. Ira Baxter.