Blake Warren Wulfe

Personal Information

E-mail: wulfebw@stanford.edu Phone: (713) 569-7795
Github: wulfebw

Research Interests

Reinforcement Learning, Probabilistic Graphical Models, Artificial Intelligence

Education

Stanford University August 2015 - December 2017
M.S. Computer Science, Specialization in Artificial Intelligence
GPA: **3.94** / **4.0**

Vanderbilt University August 2010 - May 2014
B.S Computer Science, Cum Laude & Honors
Minors in Mathematics & Engineering Management
GPA: **3.77** / **4.0**

Research Experience

Adobe Research June 2017 - September 2017
Data Scientist Intern
Hierarchical, Adversarial Imitation Learning of Drawing Policies
- ◇ Applied generative adversarial imitation learning (GAIL) to the task of learning to draw sketches from human examples, demonstrating superior sample efficiency over baseline methods (Python)
- ◇ Proposed a hierarchical extension of GAIL exhibiting improved transfer performance

Stanford Intelligent Systems Lab, Stanford University April 2016 - December 2017
Research Assistant
Automotive Scene Risk Prediction
- ◇ Implemented a framework for deriving risk estimates of simulated automotive scenes (Julia)
- ◇ Addressed collision rarity challenges through importance sampling of a Bayesian network (Julia)
- ◇ Trained domain adaptation, neural network models to predict collision risk (Python)
- ◇ Manuscript under review in Autonomous Agents and Multiagent Systems (AAMAS) 2018

Deep Reinforcement Learning of Collision Avoidance Policies
- ◇ Developed a deep reinforcement learning system that solves for optimal policies 10x faster than the baseline dynamic programming method
- ◇ Built a Boost.Python interface to an existing, high-fidelity aircraft encounter model (C++)
- ◇ Implemented and compared a variety of deep reinforcement learning algorithms (Python)
- ◇ Designed and evaluated a set of novel sampling methods to speed learning

Intelligent Agent Action Coordination
- ◇ Implemented a novel method for coordinating UAV actions that reduces collisions 25%-75%
- ◇ Developed an aircraft encounter simulation framework for evaluating agent policies (Julia)
- ◇ Designed and ran experiments in order to test the effectiveness of the proposed method
- ◇ Published results as second author in Digital Avionics Systems Conference (DASC) 2016

Human-Machine Teaming Lab, Vanderbilt University May 2013 - August 2013
Research Assistant
3D Map Generation of Archaeological Sites
- ◇ Assisted in operating, repairing, and programming autonomous UAVs
- ◇ Gathered images for conversion to 3D mappings during research trip to archaeological sites in Peru

Professional Experience

Accenture, Austin, TX August 2014 - August 2015
Business and Systems Integration Analyst
- ◇ Implemented software providing a natural language interface to users (Java)

Invivolink, Nashville, TN May 2012 - August 2012
Software Engineering Intern
- ◇ Implemented medical barcode parsing software (C#)

Computer & Technical Skills

Programming Languages: Proficient in Python, experience with Julia, C++, C, Matlab
Software: Deep learning frameworks (TensorFlow, Theano)