

William Xie

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EDUCATION

UNIVERSITY OF TEXAS AT AUSTIN, Austin, TX

M.S. in Computer Science with focus in Artificial Intelligence | May 2016

Cum. GPA: 3.67 / 4.0

RICE UNIVERSITY, Houston, TX

B.S. in Electrical and Computer Engineering | May 2014

Cum. GPA: 3.74 / 4.33 Major GPA: 3.80 / 4.33

PROJECTS

PREDICTING ATARI GAME FRAMES | Research Project

Researched and developed 3 different Siamese convolutional neural networks with motion-equivariance regularizer for the action-conditional video prediction problem in the Atari domain.

LANGUAGE GROUNDING | Research Project

Researched a novel way to use real world objects and natural language descriptions to associate visual attributes and words to their corresponding concepts in logical form. Through the process, we also created a dataset of 52 objects with 468 descriptions.

ARCANE | Undergraduate Capstone Project

Co-founded and developed a wearable navigational aid for the visually impaired. In an interdisciplinary team of 6 engineers, we created a novel system that uses stereovision to capture depth information from the environment and then wirelessly transfer the data for haptics feedback.

EXPERIENCE

UNIVERSITY OF TEXAS BUILDING-WIDE INTELLIGENCE LAB | Research Assistant

Jan 2015 - May 2016 | Austin, TX

- Researched methods for robot active search using object relationships.
- Built services in ROS to use Point Cloud Library with the Segbots.
- Researched language grounding by mapping visual attributes to predicates derived from natural language.

MIT LINCOLN LABORATORY | Summer Research Intern

May 2015 - August 2015 | Lexington, MA

- Researched methods for video alerting and distributed tracking for aerial, top-down video footage from small drones.
- Built a software system that combines change detection, object tracking, and track classification for low pixels-on-target objects.
- Presented biweekly presentations to group leaders on research findings.

RICE UNIVERSITY MULTI-ROBOT SYSTEMS LABORATORY | Research Assistant

May 2013 - September 2014 | Houston, TX

- Researched and published a distributed path planning algorithm and a distributed motion controller for multi-robot transport.
- Developed a reliable bootloader for simultaneously and wirelessly programming multiple robots. Greatly improved the workflow of robot software development and experimental data gathering.
- Built a fault-tolerant communication protocol between two asynchronous processors to allow long, continuous, error-free operation for the robot.
- Developed drivers and API for the new omnidirectional robotic gripper.

THE VELOZ GROUP | Web Entrepreneurship Intern

June 2012 – Aug 2012 | Los Angeles, CA

- Led a team to lay down groundwork and organization for a new e-commerce project
- Created an intuitive interface using PHP, CSS, and Javascript for the company's homepage

JCCA ENGINEERING CONSULTING | Engineering Intern

May 2011 – Aug 2011 | Torrance, CA

- Assisted architects on on-site surveying tasks such as measurements and edited drawings
- Edited electrical and architecture CAD files using Autocad

TEACHING

Graduate Teaching Assistant | University of Texas at Austin

- CS 391L Machine Learning
- CS 439H Principles of Computer Systems: Honors
- CS 373 Software Engineering

Peer tutor | Lafayette College

- PHYS 131: Physics I: Mechanics
- PHYS 132: Physics IIA: Electricity And Magnetism

ACTIVITIES AND HONORS

- 2015 Co-coordinator for Forum for Artificial Intelligence lecture series
- 2015 CVPR 2015 BigVision workshop participant
- 2015 AAAI 2015 volunteer
- 2015 Hour of Code volunteer
- 2014 Rice University President's Honor Roll recipient
- 2014 Rice ECE Affiliates Best Senior Design Project 2nd place winner
- 2013 IEEE Region 5 Circuit Design Competition 1st place winner
- 2013 Rice Entrepreneurship Summit 2nd place winner
- 2012 Rice Marching Owl Band member
- 2012 Houston Habitat for Humanity volunteer
- 2012 Lafayette College Investment Club member – Technology Sector
- 2011 Lafayette College Physics Club Treasurer
- 2011 Lafayette College Math Department Lab Proctor
- 2011 Lafayette College Concert Band member
- 2010 Lafayette College Dean's List recipient

SKILLS

PROGRAMMING AND TOOLS

Proficient:

C/embedded C • C++ • Python • Java

Familiar:

git • Matlab • HTML • Assembly • Mathematica •
AutoCAD • Altium • SVN • dlib • \LaTeX

PLATFORMS

Linux/Unix • Caffe • ROS • OpenCV • ARM
Cortex-M3 • MSP430 • FreeRTOS • TCP/IP

LANGUAGES

Native in Mandarin and Cantonese
Basic German and Japanese

ADVANCED COURSEWORK

Machine Learning
Probabilistic Graphical Models
Natural Language Processing
Visual Recognition
Autonomous Robotics
Wireless Networking
Graduate Probability

PUBLICATIONS

- [1] G. Habibi, K. Zachary, W. Xie, M. Jellins, and J. McLurkin, "Distributed centroid estimation and motion controllers for collective transport by multi-robot systems," in *Proc. IEEE International Conference on Robotics and Automation (ICRA)*, 2015.
- [2] G. Habibi, W. Xie, M. Jellins, and J. McLurkin, "Distributed Path Planning for Collective Transport Using Homogeneous Multi-Robot Systems," *Proc. of the International Symposium on Distributed Autonomous Robotics Systems (DARS)*, 2014.
- [3] J. McLurkin, A. McMullen, N. Robbins, G. Habibi, A. Becker, A. Chou, H. Li, M. John, N. Okeke, J. Rykowski *et al.*, "A robot system design for low-cost multi-robot manipulation," in *Proc. of the IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, 2014.