

Objective

Seeking to push the boundary of embedded systems. Interests include probabilistic robotics and embedded systems architecture.

Education

- M.S. Computer Science (Intelligent Robotics)** – GPA 3.53 Expected Fall 2012
University of Southern California (USC)
- B.S. Aerospace Engineering, minor in Computer Science** – GPA 3.39 AE, 3.91 CS May 2011
University of Southern California (USC)

Experience

- Space Exploration Technologies** – Avionics Systems Integration Engineer April 2011 - present
- Designed a hardware / software solution to emulate Dragon for JSC's ISS integration lab (SDIL)
 - Designed a vehicle-in-the-loop test rack to simulate spacecraft sensors during mission simulations
 - Developing controls and displays for a crewed version of the Dragon space capsule
- CS 547** August 2011 - December 2011
- Developed real-time a Lego pose estimation and classification program from 3D point clouds using C++ and ROS
- Advanced Tactics, Inc** – R/D Engineer January 2011 - March 2011
- Designed advanced, small-scale technology demonstrators (fixed-wing and rotary vehicles) under a grant from the Marines
 - Developed a standardized long range (60mi), line-of-sight comm package for realtime video and telemetry for all of our vehicles
- AME 441** August 2010 - December 2010
- Designed a structural health monitoring system by analyzing vibrations with custom accelerometer chips
 - Developed a realtime wireless serial communications protocol to connect multiple accelerometers to a LabVIEW base station
- USC Aerial Robotics Team** – Software Team Lead August 2009 - July 2010
- Outlined a distributed multi-agent solution for autonomous indoor navigation and lead a team to implement it
 - Implemented a Simultaneous Localization and Mapping algorithm (DP-SLAM) in C++ for quad-rotor helicopters
- USC AeroDesign Team** – Performance Captain January 2009 - July 2010
- Created a multidisciplinary design optimizer in MATLAB to spec out the competition plane as Performance Captain
 - Gained workshop experience by building plane parts from composite materials for Design/Build/Fly competition
- CS 445** January 2009 - May 2009
- Developed a particle filter to localize a robot in a known world/map with an ultrasonic sensor and magnetometer
 - Implemented a blob detection algorithm to identify objects and their pose from a 2D camera
- Illumin** – Web Developer March 2008 - December 2011
- Brought the editorial process online with a new website written with a custom MVC framework using PHP and MySQL
- Other Experience:** Raytheon – Quality Engineer, Flash Avenue – Web Developer, OneGeek – Computer Repair Technician, USC Underwater Robotics Team – Software Team Member, TruthDig.com – Web Consultant, Autonomous RC UAV

Skills

- Engineering: MATLAB, Simulink, SolidWorks (Certified Associate), LabVIEW, NX, E3, Solid Edge, MultiSim, ModelSim SE, Xilinx
- Computer Science: ROS (Robotic Operating System), C++, Java, JUnit (unit testing), SVN, Python, C, BASIC
- Web Development: PHP, MySQL, HTML, XML, CSS, Javascript, jQuery, Django, Firebug, Adobe Photoshop

Honors / Awards

- 2nd place - AIAA Student Design/Build/Fly Competition (w/ AeroDesign Team) Spring 2011
- Interactive Media Awards 2010 - Outstanding Achievement: Science/Technology (w/ Illumin) Fall 2010
- "Bridging the Gap" award from the Society of Women Engineers Spring 2010
- California Space Grant Consortium UROP Research Scholarship Spring 2010
- USC Viterbi School of Engineering Dean's List Spring 2009 - Fall 2011
- USC Viterbi School of Engineering Stillman Scholarship Fall 2009 - Spring 2011
- Most Useful Award at the Google 24 Hour Programming Challenge at USC February 2008
- Dallastown Area High School Dollars for Scholars Scholarship Spring 2007