

# Megan Boivin

[mcboivin@ucsc.edu](mailto:mcboivin@ucsc.edu) | [LinkedIn](#) | [Website](#)

---

<b>Education</b>	<b>University of California, Santa Cruz, CA</b> <b>PhD Computer Engineering</b> <b>Emphasis in Robotics and Controls</b>	Sept. 2013 – Present
	<b>University of Illinois, Urbana-Champaign, IL</b> <b>B.S. Computer Engineering</b>	Aug. 2006 – May 2011
<b>Research</b>	<b>Graduate Researcher</b> <b>University of California Robotics and Controls Lab</b> Adviser: <a href="#">Dejan Milutinović</a> Focusing on the modeling, simulation, and analysis of stochastic processes, haptics, and the application of optimization algorithms for the control of flexible needles	Sept. 2014 – Present
	<b>University of California Bionics Lab</b> Adviser: Jacob Rosen Assembled and tested 7 degree of freedom upper limb exoskeleton for studying fully functional multiple joint movements of the human arms, and to analyze and assist movement in stroke rehabilitation	April 2014 – Sept. 2014
	<b>Undergraduate Research Assistant</b> University of Illinois Robotics and neuro-Mechanical Systems Lab Advisers: Timothy Bretl and Dan Block Designed an autonomous quadrotor using closed-loop control of XYZ and Yaw to demonstrate algorithms related to navigation, scheduling, imaging, communications, and adaptation	June 2010 – May 2011
<b>Experience</b>	<b>University of California, Santa Cruz</b> Graduate Student Instructor <ul style="list-style-type: none"><li>Computer Systems and Assembly Language: Primary and full responsibility for the teaching of the course of (40+) students: lead instruction, created assignments and exams, managed TA and tutor, mentored and counseled students regarding professional and academic matters</li></ul>	Jan. 2014 – Present Summer 2016
	Graduate Teaching Assistant <ul style="list-style-type: none"><li>Computer Systems and C Programming (4 Quarters): Taught two sections per week helping students learn how to program in C by working through assigned programming projects using an UNO32 board from Microchip.</li><li>Computer Systems and Assembly Language (3 Quarters): Taught three sections per week for helping students learn how to design logic components and program in Assembly by working through assigned projects using logic design software, LC3</li></ul>	Jan. 2014 – Present

simulator, and an UNO32 board from Microchip, and helped grade assignments and exams

- Statics, Dynamics & Biomechanics: Taught three sections per week for a total of 68 students, prepared and presented original course notes and lesson plans, held office hours and assisted the students in solving problems, attended weekly staff meetings, and helped grade exams
- Pre-calculus: Taught four sections per week for a total of 110 students, prepared and presented original course notes and lesson plans, held office hours to aid students that need extra help, attended weekly staff meetings, wrote and distributed quizzes weekly as well as graded quizzes and exams.
- Engineering Ethics: Attended lectures to assist professor, held office hours, and graded assignments and exams

**United States Air Force Test Center at Edwards AFB, CA** July 2011 – July 2013

Electronic Warfare Test Engineer, 412<sup>th</sup> Electronic Warfare Group, 771<sup>st</sup> Test Squadron

**Top Secret/SCI** clearance

- Worked with a group to develop avionics data analysis tool for engineers
- Developed signal processing tool to compare simulated data to flight test data that quantified and located the error
- Attended Electronic Warfare University courses covering IR Directed Threat Systems, EW Radar Fundamentals, EW Receivers, Intro to EW, Tactical Land Based Systems, GTRI Principles of Pulse-Doppler Radar, and GTRI EMC/EMI for Engineers and Engineering Managers, GTRI Basic Antenna Concepts
- Completed required Defense Acquisition University (DAU) Test & Evaluation Level 1 certification on the Integrated Defense Acquisition, Technology, and Logistics Life Cycle Management System.

**ACM SIGbot** (Special Interest Group for Robotics) Aug 2007 – May 2011

- Designed robot to compete in the Jerry Sanders Robotics Competition during Engineering Open House.
- Created multiple autonomous cars that successfully avoided obstacles using ultrasonic sensors while in a swarm.
- Designed 2D inverted pendulum robot that balanced on a ball

**University of Illinois ECE Department** Summer 2009 & 2010

WYSE (Worldwide Youth in Science and Engineering) Camp Lab Assistant

- Instructed over 40 students on how to assemble an FM radio transmitter
- Assisted over 40 students to design autonomous cars

## Skills

- C, C++, MATLAB, OpenHaptics Toolkit, MIPS, Simulink, LabVIEW, VHDL, Solidworks
- Experience working with a wide variety of sensors and microcontrollers
- Familiar with oscilloscopes, function generators, multimeters, PCB design, soldering

## Projects

- Designed a humanoid robotic hand that replicates the movements of the operator
- Programmed an open-loop and closed-loop controller for biped motion
- Designed a mobile robotic platform from scratch integrating the mechanics, software, and electronics
- Developed a controller design of a Reaction Wheel Pendulum using MATLAB and Simulink
- Designed a recycling robot that was controlled with a DSP
- Gesture Recognition Using Xbox Kinect RGBd Camera
- Implementation of FR-FCFS Memory Controller in ESESC CPU Simulator
- Worked with a group to design a cache integrated pipelined processor with LC3b ISA
- Decoded QR-codes using a digital camera module in VHDL

## Awards

### **Konicek Family and Lisa Foundation Scholarship**

Spring 2011

- Recipients recognized for engineering excellence in innovation by demonstrating a unique application and strong understanding of engineering principles in order to create an innovative solution to an existing problem in electrical and computer engineering

## Leadership

### **Gallery of Infinity: A Burning Man Art Installation**

April 2015 – Sept 2015

Volunteer: Electronics, Programming, & Build Team

- Assisted with the electronics and programming aspect of the project
- Helped build infrastructure before deadline and installed project onsite

### **WECE (Women in Electrical and Computer Engineering)**

Aug 2007 – May 2011

Technical Projects Director

Aug 2009 – Aug 2010

- Organized and taught monthly workshops for students to improve hands-on skills
- Assisted Academic Director with technical project for university wide Engineering Open House

Social Chair

Aug 2010 – May 2011

- Directed weekly committee meetings
- Planned large scale monthly department wide social events

### **SEERS (Student Equine Emergency and Rehabilitation Society)**

Aug 2008 – May 2011

Volunteer

- Organized trips to assist in rehabilitating abused horses weekly
- Responsible for feeding over 50 horses weekly

*References available upon request*