Eric Whitmire

Technology enthusiast with interests in cognitive science, machine learning, and blurring the line between man and machine

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Education

2014 – Present	**University of Washington (UW)** PhD Computer Science and Engineering GPA: 3.95
2010 – 2014	**North Carolina State University (NCSU)** B.S. Computer Science B.S. Biomedical Engineering Cognitive Science Minor GPA: 4.00 / 4.00

Honors, Grants, and Awards

2014	National Defense in Science and Engineering Graduate Fellowship
2014	National Science Foundation GRFP Honorable Mention
2014	GOMACTech Best Poster Award
2013	Barry M. Goldwater Scholarship
2013	Autonomy Research Seed Grant
2013	NCSU Undergraduate Research Grant
2013	Best Poster Award – NCSU Undergraduate Research Symposium
2013	Top 15% in IEEExtreme Programming Competition
2013	1st Place at NCSU Student Programming Competition
2012	NCSU Undergraduate Research Grant
2011	Donald Bitzer Creativity Award
2010	Park Scholarship (4 year award for scholarship, service, leadership, and character)

Research and Work Experience

2014 – present	**Ubiquitous Computing Laboratory (Advised by Shwetak Patel)** Developing audio recorder and machine learning algorithms for automated cough detection for Tuberculosis patients Designing automatic feedback and coaching system for spirometry efforts
2012 – 2014	**Integrated Bionic Microsystems Laboratory (Advised by Alper Bozkurt)** Developed automation platform using image processing and wireless communication to electrically stimulate and steer cockroaches for search and rescue applications Designed an insect-mounted microphone array for sound localization

| Summer, 2013 | **Microsoft Software Development Intern** – Redmond, WA
Xbox One / Kinect Speech Platform Team
Designed and implemented new API for multimodal Kinect interactions |
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| Summer, 2012 | **Microsoft Software Development Intern** – Redmond, WA
Internet Explorer Web Programming Team
Designed and implemented W3C HTML 5 Dataset feature |
| Summer, 2011 | **IBM Software Development Intern** – Research Triangle Park, NC
IBM Systems Director Installation Team
Developed a cross-platform Python validation utility for IBM Systems Director |
| 2010 – 2012 | **Computational Model for Genetic Translation**
Developed optimization algorithms to test and improve computational model
Conducted statistical analysis of E. coli genome to validate model
Led the development of an interactive web service for collaborative research |

Selected Publications

E. Whitmire, T. Latif, and A. Bozkurt, "Kinect based System for Automated Control of Terrestrial Insect Biobots," in 35th Int. Conf. of the IEEE Engineering in Medicine and Biology Society, Osaka, Japan, 2013

E. Whitmire and A. Bozkurt, "Cyber-physical Network of Terrestrial Insect Biobots" in Government Microcircuit Applications and Critical Technology Conference (GOMACTech), Charleston, SC, 2014

T. Latif, E. Whitmire, T. Novak, and A. Bozkurt, "Toward Fenceless Boundaries for Solar Powered Insect Biobots," in 36th Int. Conf. of the IEEE Engineering in Medicine and Biology Society, Chicago, IL, 2014

E. Whitmire, T. Latif, and A. Bozkurt, "Acoustic Sensors for Biobotic Search and Rescue" in Sensors, 2014 IEEE Valencia, Spain, 2014

Presentations

| Nov 2014 | IEEE Sensors 2014 Conference, Valencia, Spain
(Oral) Acoustic Sensors for Biobotic Search and Rescue |
|---|---|
| Oct 2013 | UNC and NC State Annual BME Research Retreat
(Oral) Kinect-based system for automated control of terrestrial insect biobots |
| July 2013 | IEEE EMBC Conference, Osaka, Japan
(Oral) Kinect-based system for automated control of terrestrial insect biobots |

April 2013	NC State Undergraduate Research Symposium
	(Poster) Test Platform for Automated Control of Terrestrial Insect Biobots
Nov 2012	State of NC Undergraduate Research and Creativity Symposium
	(Poster) Test Platform for Automated Control of Terrestrial Insect Biobots

Leadership, Service, and Outreach

2010 – 2014	**Service Raleigh Committee Head**
	Led team to develop online registration and assignment system for 2000 volunteers
	Eliminated days of effort by automating assignment of volunteer groups to sites
2010 – 2014	**Mentor for Students in Programming Robotics and Computer Science**
	Developed and delivered lesson plans for weekend workshops for middle school students
2011 – 2012	**Engineering Ambassador**
	Served as a representative for the College of Engineering at official events

Relevant Projects

2013	**EdemaBand – Biomedical Senior Design Project**
	Conducted needs assessment at WakeMed Cardiac ICU
	Designed a wearable bioimpedance monitor for pulmonary edema
2013	**EcoCAR 2 – Center Stack Redesign**
	Developed smartphone remote control system for navigation, audio, and climate control systems of vehicle
2012	**Natural Language Course Planner**
	Developed natural language dialogue system using the Microsoft Speech platform that allows students to interactively plan their undergraduate curriculum
2012	**Engineering Career Fair Registration System**
	Registration system and nametag generator for nearly 2000 non-NCSU students at the Engineering Career Fair
2012	**PackTrack**
	Automated online attendance tracking system for 1000+ first year Engineering students

Technical Skills

Python, MATLAB, C#, C, C++, PHP, JavaScript, VBA, jQuery, Django, HTML, CSS, Git, Linux, Adobe Creative Suite, SolidWorks, Machine Learning, Embedded Systems, PCB Design, Wireless Communication, Bluetooth LE, CNC Milling