Eric Whitmire

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Hardware and software enthusiast with interests in signal processing, machine learning, and blurring the line between man and machine

Education

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

Research and Professional Experience

2014 – present	**Ubiquitous Computing Laboratory** Advised by Shwetak Patel Glove based reconfigurable input for virtual reality
Summer, 2016	**Oculus Research Intern** – Redmond, WA Advised by Laura Trutoiu
Summer, 2015	**Oculus Research Intern** – Redmond, WA Advised by Laura Trutoiu High accuracy magnetic tracking techniques
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
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**
                   Advised by Donald Bitzer
                   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, L. Trutoiu, R. Cavin, D. Perek, B. Scally, J. O. Phillips, and S. Patel, "EyeContact: Scleral Coil Eye Tracking for Virtual Reality," Proc ACM ISWC 2016

M. Goel, E. Saba, M. Stiber, **E. Whitmire**, J. Fromm, E. Larson, G. Borriello, and S. Patel, "SpiroCall: Measuring Lung Function over a Phone Call," Proc ACM CHI 2016

M. Goel, **E. Whitmire**, A. Mariakakis, S. Saponas, N. Joshi, D. Morris, B. Guenter, M. Gavriliu, G. Borriello, and S. Patel, "HyperCam: Hyperspectral Imaging for Ubiquitous Computing Applications," Proc ACM UbiComp 2015

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

T. Latif, **E. Whitmire**, T. Novak, and A. Bozkurt, "Toward Fenceless Boundaries for Solar Powered Insect Biobots," Proc IEEE EMBC 2014

E. Whitmire, T. Latif, and A. Bozkurt, "Kinect based System for Automated Control of Terrestrial Insect Biobots," Proc IEEE EMBC 2013

Reviewer for EMBC, SAP, CHI, UbiComp, IEEE Sensors

Honors, Grants, and Awards

2014	National Defense in Science and Engineering Graduate (NDSEG) 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)

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

Patents

2015   Patent application filed with USPTO in 2015 with Oculus Research

Teaching

Spring 2015   Guest lecturer in UW CSE590P: Advanced Topics in Ubiquitous Computing

Fall 2014   Tutor for UW CSE312: Foundations of Computing II

Spring 2015   Tutor for UW CSE312: Foundations of Computing II

Leadership, Service, and Outreach

2015 – 2016   FIRST Technical Challenge High School Mentor

2010 – 2014   Service Raleigh Committee Head

2010 – 2014   Mentor for Students in Programming Robotics and Computer Science

Technical Skills

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