



BRITTNEY ENGLISH



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U.S. Citizen ◊ Inactive Secret Clearance

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EDUCATION

Georgia Institute of Technology

Ph.D. in Electrical & Computer Engineering
Dissertation Advisor: Dr. Ayanna M. Howard
Expected Graduation Date: May 2018

Fall 2013 - Present

University of Florida

M.S. in Electrical Engineering
Cum Laude

2013

Georgia Institute of Technology

B.S in Computer Engineering
Graduated with Honors

2011

RESEARCH EXPERIENCE

Rehabilitation Robotics for Neurological Disorders

Graduate Research Assistant

Spring 2014 - Present

Georgia Institute of Technology, Atlanta, GA

- Develop tablet rehabilitation gaming systems by pairing a tablet with a robotic arm exoskeleton; create a 3D printable, easily scalable exoskeleton design; design tablet app games in java; assess task difficulty and develop algorithms to calculate difficulty of new tasks using machine learning and neural networks; create algorithms for adapting task difficulty within a game in order to encourage most optimal learning of the task; conduct experiments to determine how tablet gaming systems effect participant engagement, enjoyment, and learning rate during physical therapy sessions; patent pending

Robot Mobility for Children

Graduate Research Assistant

Fall 2014 - Present

Georgia Institute of Technology, Atlanta, GA

- Develop and implement control schemes that allow children with severe motor function disorders to access mobility by altering commercially available, electric, ride-on cars for toddlers

Robotic Terrain Exploration

Opportunity Research Scholar

Fall 2009/Spring 2010

Georgia Institute of Technology, Atlanta, GA

- Collected and analyzed topographical data from a navigational robotic vehicle, developed data collection software in Arduino and data analysis software in MATLAB, presented work to peers and faculty in a poster competition

ENGINEERING EXPERIENCE

Littoral Combat Ship

Computer Engineer

August 2011-August 2013

Naval Surface Warfare Center, Panama City, FL

- Technical Responsibilities: Installed, configured, uninstalled, and debugged ship software and hardware; developed bash scripts, batch scripts, and C++ utilities to improve the existing system to the needs of the sailors; investigated system flaws to determine bugs; created work arounds and fixes; became a subject matter expert of system bugs, work arounds, and solutions
- Communication Responsibilities: Worked in a team environment; reported progress to team lead and branch heads regularly; wrote technical and user manuals to support use of the computer systems on board the ship; wrote software design description documentation to provide detailed descriptions of system software; reported problems in official problem change reports; provided situational reports during test events; wrote technical procedures for installation and testing of the system; interacted with the sailors to acquire detailed knowledge of the clients' needs of the system; participated in demonstrations of the system
- Testing Responsibilities: Participated in system testing in lab environments and at sea; ran software test procedures in lab environment to validate system software; acted as the software integration subject matter expert on the ship during at sea testing for the ship and its autonomous mine detection vehicles; collected, analyzed, and distributed data from test events; wrote situation reports about the current progress of testing

Anti-IED Equipment Testing

June 2011-August 2011

Computer Engineer

Naval Surface Warfare Center, Panama City, FL

- Validated anti-IED equipment against known targets; prepared test equipment and targets; participated in team testing events on a bomb range while prioritizing best testing practices including safety, accuracy, redundancy, and effectiveness; completed forensic analysis of known targets to validate systems' abilities to neutralize targets; collected and analyzed results; was recognized via a letter of appreciation from a Marine General for superior efforts in test events

P-5 Pod

Summer 2010

Lead Engineer of Air to Ground Combat Air Force Material Command, Air Armament Center, Eglin AFB, FL

- Analyzed data from air-to-air and air-to-ground shots fired from F-15s, F-16s, and A-10s as collected by the P-5 pod; assisted with setting up mission room software, briefing pilots, and checking P-5 systems during live air craft missions; developed C# software to automatically analyze air-to-air shots and make analysis time 48 times faster; developed templates and procedures for data analysis; analyzed two years' worth of mission data that had not yet been analyzed; analyzed results to discover specific errors in equations used in the P-5 software; created presentations of results and findings

Visual Systems for Robotic Arm Applications

Summer 2010

Robotics Research Intern

Air Force Research Lab, Tyndall AFB, FL

- Experimented with visual systems paired with robotic arms to discover challenges and benefits for new operators, presented findings

Pyrocopter

Summer 2009

Robotics Research Intern

Air Force Research Lab, Tyndall AFB, FL

- Debugged and improved circuit designs, soldered circuitry and wiring, programmed microprocessors to control the system, designed and built remote controls, programmed controls, tested the severity of onboard fires, and presented results

Geopolymers For Airbase Application

Summer 2008

Chemistry Research Intern

Air Force Research Lab, Tyndall AFB, FL

- Mixed a variety of geopolymer cements, tested geopolymers for heat resistance and strength for next generation fighter aircraft runways, presented findings

Environmentally Friendly Outdoor Anthrax Decontamination Strategies Summer 2007
Microbiology Research Intern *Air Force Research Lab, Tyndall AFB, FL*

- Researched spore germination methods for Anthrax decontamination, presented results to staff, and compiled project findings into a poster, report, and presentation that won prizes including the Air Force first place prize in the Intel International Science Fair and Engineering Fair

TEACHING EXPERIENCE

Opportunity Research Scholars Program Spring 2017 - Present
Graduate Teaching Assistant *Georgia Institute of Technology, Atlanta, GA*

- Help coordinate an undergraduate research program with 22 teams of undergraduate students, facilitated discussions about the value of graduate school, advise students on graduate school opportunities, facilitate research forums to discuss research opportunities and topics, reinforce techniques learned in seminars, mentor students on how to be successful in research, guide students through writing and editing research grants, fellowship and scholarship applications, resumes, and applications for summer research programs

ECE2811/ECE3811 Vertically Integrated Project: I-Natural Fall 2014 - Spring 2016
Graduate Teaching Assistant *Georgia Institute of Technology, Atlanta, GA*

- Assisted students with design project, provided design feedback, directed students to campus resources necessary to build projects, ordered parts for student projects, assisted with debugging projects when roadblocks occur

GT1000 First-Year Seminar Fall 2014
Instructor *Georgia Institute of Technology, Atlanta, GA*

- Encouraged success of freshman at Georgia Tech through teaching a class that covers topics such as campus resources, study skills, resume preparation, and career and major exploration; worked with team leaders to facilitate small group mentoring and team building

Summer Undergraduate Research in Engineering (SURE) Robotics Summers 2014 - 2016
Graduate Student Coordinator *Georgia Institute of Technology, Atlanta, GA*

- Taught intensive research learning experience, led weekly status meetings, facilitated discussions about the value of graduate school, reinforced techniques learned in seminars, coordinated social events, assisted students with being successful in their research projects

ECE2031 Digital Design Laboratory Fall 2013 - Spring 2014
Graduate Teaching Assistant *Georgia Institute of Technology, Atlanta, GA*

- Administered three lab sections; proctored exams and quizzes; graded lab reports, papers, and quizzes; performed writing consultations with students in order to help improve their writing skills; led a group of undergraduate teaching assistants; assisted students with their weekly labs

PUBLICATIONS

Conference Publications

- B. English, A. Howard, "The Effects of Adjusting Task Difficulty on Learning Motor and Cognitive Aspects of A Multitasking Task." 2017 IEEE Symposium Series on Computational Intelligence, December 2017. In Press.
- B. English, A. Coates, A. Howard, "Recognition of Gestural Behaviors Expressed by a Humanoid Robotic Platform for Teaching Affect Recognition to Children with Autism - A Healthy Subjects Pilot Study." 9th International Conference on Social Robotics, November 2017. In Press.

- B. English, A. Howard, “The Effects of Auditory and Visual Cues on Timing Synchronicity for Robotic Rehabilitation.” IEEE International Conference on Rehabilitation Robotics, July 2017.
- B. English, A. Howard, “The Effects of Musical Cues on Motor Learning Using a Robotic Wrist Rehabilitation System.” IEEE Workshop on Advanced Robotics and its Social Impacts, March 2017.
- B. English, A. Howard, “An Adaptive Robotic Tablet Gaming System for Post-Stroke Hand Function Rehabilitation.” ACM/IEEE International Conference on Human-Robot Interaction Extended Abstracts, March 2015.
- B. English, J. Hunter, J. Tuck, and G. Tzintzarov, “Designing a Scalable Robotic Exoskeleton and Tablet Gaming Suite for Hand Function Rehabilitation.” Rehabilitation Engineering and Assistive Technology Society of North America Annual Conference, June 2015.
- B. English and A. Howard, “Encouraging Specific Intervention Motions via a Robotic System for Rehabilitation of Hand Function: A Healthy Pilot Study.” IEEE Symposium Series on Computation Intelligence, December 2014.
- B. English and A. Howard, “Engagement study of an integrated rehabilitation robotic tablet-based gaming system.” IEEE Workshop on Advanced Robotics and its Social Impacts, May 2014.
- L. Parker, B. English, M. Chavis, A. Howard, “Improvements To Satellite-Based Albedo Measurements Using In Situ Robotic Surveying Techniques.” AIAA Infotech@Aerospace, April 2010.

RESEARCH SUPERVISION

Ernest Williams

- Fall 2016 · Georgia Institute of Technology · “Robot Mobility for Children”

Jonathan Osei-Owusu, Ernest Williams, and Philip Wolfe

- Fall 2015 - Spring 2016 · Georgia Institute of Technology · “Robot Mobility for Children,” Intel Cornell Cup Semifinalists

Kristen Fernandez, Jennifer Hunter, and Jonathan Tuck

- Fall 2015 - Spring 2016 · Georgia Institute of Technology · “Designing a Scalable Robotic Exoskeleton and Tablet Gaming Suite for Hand Function Rehabilitation,” Intel Cornell Cup Finalists

Jennifer Hunter, Jonathan Tuck, and Gueorgui Tzintzarov

- Fall 2014 - Spring 2015 · Georgia Institute of Technology · “Designing a Scalable Robotic Exoskeleton and Tablet Gaming Suite for Hand Function Rehabilitation,” 1st Place Research Team at the Opportunity Research Scholars’ Research Competition, RESNA Student Design Competition Finalists

Funded Grants

- CRA-W Collaborative Research Experience for Undergraduates Grant, “Robot Mobility for Children,” Fall 2016, \$1,500, (Undergraduate Award Winner: Ernest Williams, Graduate Student Advisor: Brittny English, Faculty Advisor: Ayanna Howard)
- Georgia Tech President’s Undergraduate Research Award (PURA) Salary Grant, “Designing a Scalable Robotic Exoskeleton and Tablet Gaming Suite for Hand Function Rehabilitation,” Spring 2016, \$1,500, (Undergraduate Award Winner: Kristen Fernandez, Graduate Student Advisor: Brittny English, Faculty Advisor: Ayanna Howard)
- CRA-W Collaborative Research Experience for Undergraduates Grant, “Designing a Scalable Robotic Exoskeleton and Tablet Gaming Suite for Hand Function Rehabilitation,” Fall 2015 - Spring 2016, \$4,500, (Undergraduate Award Winner: Jennifer Hunter, Graduate Student Advisor: Brittny English, Faculty Advisor: Ayanna Howard)

- Georgia Tech President’s Undergraduate Research Award (PURA) Salary Grant, “Designing a Scalable Robotic Exoskeleton and Tablet Gaming Suite for Hand Function Rehabilitation,” Fall 2015, \$1,500, (Undergraduate Award Winner: Jonathan Tuck, Graduate Student Advisor: Brittney English, Faculty Advisor: Ayanna Howard)

FELLOWSHIPS AND AWARDS

Stanford Rising Stars in EECS Participant	<i>2017</i>
SWE Academic Leadership for Women Engineers Program	<i>2017</i>
University of Michigan NextProf Participant	<i>2017</i>
NCWIT Collegiate Award Honorable Mention	<i>2016</i>
RESNA Student Design Competition Finalist	<i>2015</i>
Association for the Advancement of Artificial Intelligence Broadening Participation in AI (AAAI-BPAI) Travel Award	<i>2014</i>
Science, Mathematics, and Research for Transformation (SMART) Scholarship	<i>2009-2011</i>
Opportunity Research Scholar (ORS), Georgia Institute of Technology	<i>2009-2011</i>
Honors Program Student, Georgia Institute of Technology	<i>2008-2011</i>

SELECTED NEWS ARTICLES



“Brittney English Applies Lessons from Childhood to Engineering Outreach” Georgia Tech ECE News. July 24, 2017. url: <<https://www.ece.gatech.edu/news/593705/brittney-english-applies-lessons-childhood-engineering-outreach>>



“Women of Robotics” Georgia Tech News. April 7, 2017. url: <<http://www.news.gatech.edu/features/women-robotics>>



“Ph.D. Research Mentor Brittney English Pays it Forward” Georgia Tech ECE News. August 19, 2015. url: <<https://www.ece.gatech.edu/news/437451/phd-research-mentor-brittney-english-pays-it-forward>>