

Ceara Ann Byrne

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Doctor of Philosophy in Computer Science, Human Computer Interaction, ~2018

Georgia Institute of Technology, Atlanta, Georgia

Advisor: Dr. Melody Jackson

Master of Science in Human Computer Interaction, 2015

Georgia Institute of Technology, Atlanta, Georgia

Project: A Method to Evaluate Haptic Interfaces for Working Dogs

Advisor: Dr. Melody Jackson

Master of Science in Industrial Design, 2015

Georgia Institute of Technology, Atlanta, Georgia

Thesis: Design of an e-Textile sleeve for tracking knee rehabilitation for older adults

Advisor: Dr. Claudia Rebolá

Certificate in Sustainable Design, 2009 - Present

University of California, Berkeley, CA

Bachelor of Science in Industrial Design, 2006

Georgia Institute of Technology, Atlanta, Georgia

Specialized in Biomechanics and Usability

Research Experience

Graduate Researcher

Aug 2013 – Present

FIDO (Facilitating Interactions for Dogs with Occupations) - Animal Computer Interactions Lab
Georgia Institute of Technology, Atlanta, GA

DogStar Instrumented Dog Toys - Funded through DARPA

- Design and development of sensor-laden dog toys to predict success as a service dog.
- Designed and conducted two-year longitudinal study on 48 assistance dogs.
- Developed a Machine Learning test-bed with 5 different models to ascertain best algorithm for determining temperament.

Enabling wireless two-way communication between working dogs and their handlers through the use of vibration motors

- Iteratively developing sensors while establishing optimal on-body locations for multiple vibrotactile inputs
- Developing a vest allowing for full canine range of motion containing six vibration motors to allow for testing of discrimination between inputs
- Designing of testing protocol to determine vibrotactile discrimination by pairing stimuli with task cues

Industrial Design Master's Thesis
Georgia Institute of Technology, Atlanta, GA

Aug 2012 – May 2013

Design of an e-textile Knee Sleeve for Rehabilitation of Older Adults

- Offset rehabilitation to the rehabilitated by leveraging e-textiles as a biofeedback device
- Iteratively designed and developed FSR sensor integration into textiles based upon criteria determined during interviews with physical therapists
- Conducted interviews, observation, and a participatory design workshop to establish users' needs and determine product viability and success within the domain

Employment History

Technical Intern, Ecosystems and Innovation
AT&T Foundry, Atlanta, GA

May 2015 – Aug 2015

Front-End Developer for Linux containers (LXC) and distribution (LXD)

- Developed the GUI for starting, stopping, creating, and destroying Linux containers using Node-Red, nodeJS, HTML, and CSS
- Implemented pre-created, personalized image distributions for LXC and Ubuntu images for LXD through the GUI
- Leveraged websockets for back-end communication to distinct uVerse features

Technical Intern, Ecosystems and Innovation
AT&T Foundry, Atlanta, GA

May 2014 – May 2015

Usability researcher and user experience designer for Connected Car and Digital Life products

- Composed 1 formative study, independently conducted 2 full, formative usability studies (~12 participants each), analyzed 6 formative and summative studies, & organized 1 readout for clients
- Lead UX design for a novel Connected Car portal, head unit, and mobile application

User Experience intern
Isobar, Chicago, IL

Jun 2013 – Dec 2013

User experience designer and usability test coordinator for 3 intern-driven digital media projects

- Lead UX design for MIT Media Lab's Member Connect Mobile Application reaching ~140 members - iPhone & Android platforms
- Designed UX for a novel, in-house ideation tool to encourage brainstorming in corporate environments, which underwent 2 rounds of usability testing and is currently the standard for ideation and brainstorming sessions in the Chicago office
- Developed a wearable keypad to supplement Google Glass

Design Research Intern, Concept Team
Milwaukee Electric Tool, Milwaukee, WI

June 2012 – Aug 2012

Design researcher for the concept group and advanced engineering teams to enable product expansion into new hand tool markets

- Leveraged Human-Centered-Design Methods, such as contextual interviews, "Day in the Life of", and competitive analyses to break into the market for 20+ new hand tool products
- Used wireframing & process flow analysis for mobile development to enhance Milwaukee Electric Tool radio experience
- Developed a full-day research protocol for TTI's Asia Office to rethink the design and development of 2 potential new market products

Product Design Consultant

Mar 2011 – Aug 2011

Pottery Barn Teen Division & Martin Sprouse Furniture, San Francisco, CA

Concept designer branching into new product lines

- Led the design development of pieces from sketch concept through revision to final product
- Created graphical visualizations of 6 new office products from initial ideation through final concept for Zynga

Product Design Consultant

Dec 2007 – Dec 2010

Project Frog, Inc., San Francisco, CA

Design and management of several major product lines within the Frog modular, sustainable building system

- Collaborated extensively with manufacturers, structural engineering consultants, supply chain & construction teams
- Used Arena PLM software to manage product life cycle and documentation from concept & revisions through production
- Organized & led Inspiration Trips to research industry-leading sustainable designs and trends, as well as identified opportunities for product innovation

Publications and Working Papers

Freil, L., Byrne, C., Valentin, G., Zeagler, C., Starner, T., Jackson, M. M. Canine Centered Computing. Submitted to Foundations and Trends in Human-Computer Interaction. 2016.

Zeagler, C., Byrne, C., Valentin, G., Freil, L., Kidder, E., Crouch, J., Starner, T., Jackson, M. M. (2016). Search and rescue: dog and handler collaboration through wearable and mobile interfaces. In *Proceedings of the Third International Conference on Animal-Computer Interaction*. ACM.

Byrne, C., Freil, L., Jackson, M., & Starner, T. E. (2016). A Method to Evaluate Haptic Interfaces for Working Dogs. *International Journal of Human-Computer Studies*

Byrne, C., Kerwin, R., Zuerndorfer, J., Gilliland, S., Guo, Z., Jackson, M., & Starner, T. E. (2014, April 1). Two-Way Communication between Working Dogs and Their Handlers. *IEEE Pervasive Computing*, (2), 80-83.

Byrne, C. A., Rebola, C. B., & Zeagler, C. (2013, September). Design Research Methods to Understand User Needs for an eTextile Knee Sleeve. In *Proceedings of the 31st ACM international conference on Design of communication*, 17-22.

Byrne, C. A. (2013). *Design of an e-Textile sleeve for tracking knee rehabilitation for older adults* (Master's Thesis).

Teaching Experience

Instructor on Record

Semester	Course	Title	Enrollment	Notes
Summer 2016	CS/PSYC3750	User Interface Design	27	Project-based

Courses as TA

Semester	Course	Title	Enrollment	Notes
Fall 2015	CS/PSYC3750	User Interface Design	75	Gave lecture
Fall 2014	ID2401	Visual Design Thinking	23	Gave lecture
Spring 2014	CS7470/ID4833	Mobile and Ubiquitous Computing	80	
Fall 2013	COA 1060	Design Research	80 / Section: 13	
Spring 2013	ID/Arch	ID and Architecture History	198	Head TA
Fall 2012	COA 1060	Design Research	80 / Section: 15	
Spring 2012	ID/Arch	ID and Architecture History	197	Head TA
Fall 2011	ID/Arch	ID and Architecture History	197	Head TA

Roles and Duties

- Assisted instructors with lectures, exams, and record keeping
- Mentored student projects
- Led discussion sessions
- Managed undergraduate and graduate teaching assistants

Professional Affiliations

ACM, LEED Accredited Professional since 2009

Honors and Awards 45

- College of Computing Graduate Student Award: 7001 Research Award
- Featured in Georgia Tech's *Research Horizons* 2015 article on "The Heart of Innovation" for my work on IoT and connected devices
- GTRIC Innovation Competition Semi-Finalist, 20112

Service

Volunteered with Engineers Without Borders (EWB) and Project H (2007-2011).