

## SUMMARY

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I am a researcher at Apple, applying **machine learning** and **HCI** to improve **accessibility** in technology. I received my PhD at the University of Washington with **NSF** and **Microsoft Research fellowships**, advised by Shwetak Patel in the Ubiquitous Computing Lab.

## EDUCATION

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### University of Washington (2012 – 2019)

Ph.D. Student, Computer Science

Area: Ubiquitous Computing

Advisor: Dr. Shwetak Patel

### Harvey Mudd College (2008 – 2012)

Bachelor of Science, Computer Science

☆ President Scholar (full tuition merit scholarship)

Graduated with distinction

GPA: 3.6/4.0

## SKILLS

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**Programming:** Python, C++, OpenCV, scikit-learn, Pandas, Altair, MXNet, Java, Arduino, SystemVerilog, Objective-C, C#, Scheme, Prolog

**Software:** SolidWorks, Autodesk Inventor, Photoshop

**Hardware:** 3D printing, laser cutting, fabrication for eTextiles, machining for metal and wood

**Languages:** English; conversational in Dutch, French; familiar with Chinese, German, Hungarian

## WORK EXPERIENCE

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### Researcher, Apple

9/2019 – present

Manager: Jeff Bigham

Working at the intersection of machine learning and HCI to improve accessibility. One project, Screen Recognition, applies computer vision to automatically infer accessibility metadata for mobile apps from their pixels. Built much of the supporting infrastructure for research and development, analyzed collected dataset. Published at CHI '21 and released as an accessibility feature in iOS for VoiceOver.

### Graduate Research, University of Washington

9/2012 – 8/2019

Advisor: Shwetak Patel

Dissertation work investigated how smartphone cameras can screen newborns for dangerous levels of jaundice, yellowing of the skin, in close collaboration with UW Medical Center. Developed data collection procedures and software, applied computer vision to parse images and machine learning to estimate jaundice levels. Work resulted in two publications (one awarded best paper nominee), two patents, and commercial development.

### Research Intern, Microsoft Research Redmond

6/2018 – 9/2018

Manager: Jessica Lundin

Worked on improving CHAMP, a system to monitor infants with single ventricle heart disease. Communicated with medical partners at Children's Mercy Hospital, concretized technical goals, formulated methodology, wrangled and pre-processed data, developed prediction algorithms, and drafted future work. Published as part of my dissertation.

### Research Intern, Microsoft Research Redmond

6/2015 – 9/2015

Manager: Merrie Morris

Conceived and developed a prototype of TeleTourist, a system that uses video calls with strangers to share experiences for people with mobility restrictions. Interviewed individuals with mobility restrictions as formative work, designed system features, and implemented a subset of them for a prototype. Presented the work as a poster at CSCW '16 and resulted in a patent.

### Research Science Intern, Amazon

6/2014 – 9/2014

Manager: Jim Curlander

Designed, developed, and evaluated eyes and head tracking based user interface elements for enhanced reality interfaces in fulfillment centers. Combined concepts from computer graphics with HCI. Produced several prototypes, demonstrated the system in its intended environment. Resulted in a patent.