

# Emma J. McDonnell

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## Education

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UNIVERSITY OF WASHINGTON  
**Ph.D in Human Centered Design and Engineering**  
Advised by Leah Findlater

SEATTLE, WA  
2019- Present

NORTHWESTERN UNIVERSITY  
**Bachelor of Science Computer Science**  
Minor in Gender and Sexuality Studies

EVANSTON, IL  
2015 to 2019

## Research Interests

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Human-Computer Interactions, Accessibility, Assistive Technology, Novel Interfaces, Social Accessibility, Disability Studies

## Research Experience

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UNIVERSITY OF WASHINGTON  
**Research Assistant**

2019-Present

- Advised by Leah Findlater, Audrey Desjardins, and Daniela Rosner
- I am currently developing an interview study with Deaf and Hard of Hearing (DHH) people and captioners investigating how DHH people use captions for access and how hearing people react to captioning in different contexts

NORTHWESTERN UNIVERSITY  
**Research Assistant**

2017-2019

- Advised by Anne Marie Piper and Bryan Pardo
- Developed a real-time conversation monitoring system for small-group conversations designed to indicate to hearing individuals when their conversation behaviors become inaccessible to hard of hearing individuals
- Built an instrument tuner that runs on Android OS and indicates if a musical note is sharp, flat, or in tune via haptic feedback to be utilized by blind musicians for whom traditional tuners are inaccessible
- Created a small dataset of audio segments from podcasts, and used it to train a classifier using VGGish in order to classify audio as speech, non-speech noise or silence
- Built screen-reader navigable interface to allow a user to upload an audio file, run sound classification, and navigate to speech, silences, and non-speech events using Angular front end and Flask back end
- Awarded an Undergraduate Research Grant to fund this work

## Teaching Experience

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FUNDAMENTALS OF COMPUTER PROGRAMMING  
**Head Teaching Assistant**

Winter 2018, Fall 2018, Winter 2019

- Responsible for teaching three discussion sessions a week, running weekly office hours and assisting in grading
- Worked with Professor Sara Sood to teach discussion sessions designed for students with no prior experience
- Taught students in Racket, a variant of Scheme

FUNDAMENTALS OF COMPUTER PROGRAMMING 1.5  
**Teaching Assistant**

Spring 2018

- Responsible for running weekly office hours and assisting during class sessions
- Taught novice programmers Python

INTRODUCTION TO DATA STRUCTURES AND ALGORITHMS  
**Teaching Assistant**

Fall 2017

- Ran weekly office hours and assisted in grading exams and weekly homework

## Work Experience

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IBM, Austin, Texas

June 2018 - September 2018

### Research Intern, Division of Accessibility Research

- Implemented an indoor navigation system called NavCog which provides blind users turn-by-turn directions to make multiple spaces on the IBM Austin campus more accessible to blind visitors and employees
- Accessibility Subject Matter Expert and Team Lead for a design team working to make airport navigation more accessible
- Created a tool to automatically generate accessible color palettes to enable web designers to meet web accessibility standards

UNIVERSITY OF MINNESOTA, Soudan, Minnesota

June 2016 - September 2016

### Decommissioning Intern, Soudan Underground Laboratory

- Deconstructed MINOS Neutrino detector, a joint venture between the University of Minnesota and Fermi National Accelerator Laboratory

## Honors/Awards

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MURPHY SCHOLAR

September 2015

- One of 17 of 377 First Years in Northwestern's McCormick School of Engineering and Applied Sciences selected to receive a stipend for independent research and receive research mentoring

GEORGE C. CASEY PRIZE

May 2019

- Awarded to the best essay written by an undergraduate Gender Studies student at Northwestern that year

## Volunteer/Service

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BEST BUDDIES

September 2015 – March 2019

- Vice President for Northwestern University's Best Buddies Chapter
- Previously served as Membership Coordinator and Activities Coordinator
- Responsible for coordinating bi-weekly activities for meetings between students with disabilities and Northwestern students

TOURNAMENT DIRECTOR

January 2018-May 2019

- Ran Northwestern's Tournament of Champions in Extemporaneous Speaking, a national speech tournament for 60-70 of the nation's best high school extemporaneous speakers
- Coordinated an annual conference and two-day tournament, leading a team of 15 peers to manage catering, registration, scheduling, and awards

## Relevant Skills

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- Programming experience in C, C#, C++, Python, Java, Javascript, HTML, CSS, Unix, and Racket
- Fluent in Spanish, elementary proficiency in American Sign Language
- Accomplished public speaker, making national semifinals in extemporaneous, impromptu, and persuasive speaking in collegiate competition