

ANNE SPENCER ROSS

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I am a PhD student in the Paul G. Allen School of Computer Science & Engineering at the University of Washington. My broad interests are in Human-Computer Interaction. I am passionate about enabling diverse groups of people to access, interact with, and communicate through technology. I am currently working with Dr. James Fogarty and Dr. Jacob O. Wobbrock on making mobile applications more accessible to people with disabilities.

EDUCATION

University of Washington, Seattle, WA

Ph.D. Student, Computer Science & Engineering, GPA: 3.94

2015 – present

Master of Science

2019

Focused in Human-Computer Interaction and Accessibility

Colorado State University, Fort Collins, CO

B.S. in Computer Science, Magna Cum Laude with Honors, GPA: 3.99

2012 – 2014

Thesis: *Examination of the Dedicated Research Assistant (DESA) System Usability and Effectiveness*

University of California Santa Cruz, Santa Cruz, CA

Major: Film Production, Minor: Statistics, GPA: 3.95

2010 – 2012

AWARDS AND SERVICE

Best Paper Honorable Mention, *ASSETS 2018*

2018

Best Paper Honorable Mention, *ASSETS 2017*

2017

Graduate Research Fellowship, *National Science Foundation*

2017

2nd Place, ACM Graduate Research Competition, *Grace Hopper Celebration of Women in Computing*

2016

Honorable Mention, Graduate Research Fellowship, *National Science Foundation*

2016

Wilma Bradley Endowed Fellowship in Computer Science & Engineering, *Univ. of Washington*

2015 – 2016

Natural Sciences Undergraduate Fellowship, *Colorado State Univ.*

2014

Frances Allen Scholarship in Computer Science, awarded 2 years, *Colorado State Univ.*

2013 – 2014

Dean's Honors: Fall, Spring, *Colorado State Univ.*

2012 – 2013

Ram Transfer Scholarship for Academic Achievement, awarded 2 years, *Colorado State Univ.*

2012 – 2014

Dean's Honors: Fall, Winter, and Spring, *Univ. of California Santa Cruz*

2010 – 2012

SELECT PUBLICATIONS

An Epidemiology-Inspired Large-Scale Analysis of Android App Accessibility

2020

Anne Spencer Ross, Xiaoyi Zhang, Jacob O. Wobbrock, James Fogarty

TO APPEAR IN TACCESS, INVITED SUBMISSION

Examining Image-Based Button Labeling for Accessibility in Android Apps through Large-Scale Analysis

2018

Anne Spencer Ross, Xiaoyi Zhang, Jacob O. Wobbrock, James Fogarty

ASSETS 2018, BEST PAPER NOMINATION

Epidemiology as a Framework for Large-Scale Mobile Application Accessibility Assessment

2017

Anne Spencer Ross, Xiaoyi Zhang, James Fogarty, Jacob O. Wobbrock

ASSETS 2017, BEST PAPER NOMINATION

Interaction Proxies for Runtime Repair and Enhancement of Mobile Application Accessibility

2017

Xiaoyi Zhang, Anne Spencer Ross, Anat Caspi, James Fogarty, Jacob O. Wobbrock

CHI 2017

PROFESSIONAL EXPERIENCE

University of Washington | **Research Assistant**

DUB GROUP, Advisors: James Fogarty, Jacob O. Wobbrock

2015 – present

Exploring ways to conceptualize, assess, and repair smartphone accessibility for people with disabilities.

Developed a conceptual framework for identifying and fixing accessibility barriers in mobile apps. This framework draws attention to under-studied factors that impact accessibility such as source code, tools, company and governmental roles, and social norms. Creating improvements to Android Studio to better support developing accessible apps.

Google, Mountain View | **Research Intern**

ACCESSIBILITY DEVELOPER INFRASTRUCTURE TEAM, Hosts: Casey Burkhardt, Shengxiong Xia

Summer 2019

Designed and implemented an API extension to the automated Android Accessibility Test Framework to integrate human annotation. Designed and implemented a prototype of the human annotation feature into the interactive Android Accessibility Scanner app. Designed and performed a user study with app accessibility testers to explore how they might use this feature.

Microsoft Research, Redmond | **Graduate Research Intern**

ABILITY AND ENABLE GROUPS, Mentors: Ed Cutrell, Meredith Ringel Morris, Alex Fiannaca, Melanie Kneisel

Summer 2018

Prototyped an audio-based, virtual navigation app to explore how such an experience could help people with vision impairments familiarize themselves with an area and be more motivated and comfortable exploring.

University of Washington | **Research Assistant**

DUB GROUP, Mentor: Sean Munson

2016 – 2018

Explored how technology can support higher education students with Autism in teamwork settings. Designed and conducted interviews with students with Autism using modified open-ended questions, value statement ranking (Q-methodology), and a collage activity to engage individuals who may not always strongly respond to standard conversational interviewing.

ARK LAB, Mentor: Noah Smith

2017

Explored how working with a machine in the loop on creative writing may help creativity. Through a user study of prototype creative writing systems, we presented common attitudes, experiences, and thoughts on machine-in-the-loop writing. These insights guide the development of new language models that will better provoke human creativity.

Colorado State University | **Undergraduate Research Assistant**

2013 – 2014

HCI AND AI LABS, Advisors: Jamie Ruiz, Adele Howe

Designed and implemented a personalized web search assistant and conducted usability studies. Explored using a mobile phone accelerometer and gyroscope to identify individuals and their activities.

Naval Postgraduate School | **Naval Research Enterprise Internship Program Intern**

Summer 2013

Investigated using Naïve Bayes classifiers to classify characteristics of Twitter users based on tweets

University of Maryland, Baltimore County | **Researcher at REU Site: Interdisciplinary Program in High Performance Computing**

Summer 2012

Developed visualizations for and determined appropriate statistical analysis of water quality data. The visualization GUI presented novel interactions between different features in the data. Was presented to colleges at the department of natural resources as a potential means for researchers and the public to understand the data.

University of Colorado Denver | **Summer Education and Training Intern**

Summer 2011

Produced instructional films on research methods being used in a psychiatric lab. These films provided a more accessible way to inform participants and the public about research methods. One is presented on the lab's website and at community outreach events. One video was published as a technique for explaining methods to researchers for replication.

TEACHING EXPERIENCE

University of Washington, Seattle, WA

Teaching Assistant – “Introduction to HCI” (CSE 440)

Winter 2019

Professor: James Fogarty. Ran two sections and aided in project feedback, assignment rubrics, and grading.

Teaching Assistant – “Advanced Topics in HCI” (CSE 510)

Spring 2017

Professor: James Fogarty. Aided in project feedback and assignment design.

PROFESSIONAL AND PERSONAL MENTORING

OurCS@UW+AccessComputing Research Lead

April 2019

Lead a two-day, 9-hour research experience for five undergraduate women with disabilities to introduce them to human-centered design and research

Women in Science and Engineering Bridge REU Mentor

Summer 2017

Worked with two students on a summer research project, resulting in a poster and oral presentation

Annie Hanson (incoming 1st year)

Maryam Bahadori-Nejad (incoming 1st year)

Individual Students Mentored

Summer 2017

Ishaan Chainani (summer high school research intern)

Undergraduate Mentor Through the ACM-W, I mentor two women undergraduate computer science students; I answer questions about school and technology careers	2017 – <i>present</i>
New Graduate Student Mentor Mentored four incoming PhD graduate students during their first year	2016
Smartphone Tutor Assist an individual with low-vision with learning to use a smartphone	2016 – 2018
Computer Tutor Assisted an individual learn basic computer skills	2012 – 2014

SERVICE

SIGACCESS Volunteer: created student volunteer assistant training	2018 – <i>present</i>
DUB Student Coordinator	2018 – <i>present</i>
CHI Student Volunteer	2016, 17, 18
Computer Science & Engineering HCI Student Skill Share Coordinator	2017
Computer Science& Engineering New Graduate Students Orientation Coordinator	2016
Computer Science & Engineering New Graduate Students Mentoring Coordinator	2016

SELECT INVITED PRESENTATIONS

<i>A Large-Scale Analysis of Mobile App Accessibility</i> Anne Spencer Ross GOOGLE, ANDROID ACCESSIBILITY GROUP	2019
<i>An Epidemiology-Inspired, Large-Scale Analysis of Mobile App Accessibility</i> Anne Spencer Ross IRESEARCH FAIR, UNIV. OF WASHINGTON	2019
<i>An Epidemiology-Inspired, Large-Scale Analysis of Mobile App Accessibility</i> Anne Spencer Ross COMPUTER SCIENCE & ENGINEERING RESEARCH DAY, UNIV. OF WASHINGTON	2018
<i>Epidemiology as a Framework for Large-Scale Mobile Application Accessibility Assessment</i> Anne Spencer Ross COMPUTER SCIENCE & ENGINEERING RESEARCH DAY, UNIV. OF WASHINGTON	2017
<i>Supporting Equity in Smartphone Accessibility with Third-Party Repair Tools</i> Anne Spencer Ross SCHOLAR'S STUDIO, UNIV. OF WASHINGTON	2016

ADDITIONAL PUBLICATIONS

<i>Robust Annotation of Mobile Application Interfaces in Methods for Accessibility Repair</i> Xiaoyi Zhang, <u>Anne Spencer Ross</u> , James Fogarty UIST 2018	2018
<i>Values, Identity, and Social Translucence: Neurodiverse Student Teams in Higher Education</i> Annuska Zolyomi, <u>Anne Spencer Ross</u> , Arpita Bhattacharya, Lauren Milne, Sean Munson CHI 2018	2018
<i>Creative Writing with a Machine in the Loop: Case Studies on Slogans and Stories</i> Elizabeth Clark, <u>Anne Spencer Ross</u> , Chenhao Tan, Yangfeng Ji, Noah Smith IUI 2018	2018
<i>Value Sensitive Design for Neurodiverse Teams in Higher Education</i> Annuska Zolyomi, <u>Anne Spencer Ross</u> , Arpita Bhattacharya, Lauren Milne, Sean Munson ASSETS 2017	2017
<i>MEGARes: an Antimicrobial Resistance Database for High Throughput Sequencing</i> Steven M. Lakin, Chris Dean, Noelle R. Noyes, Adam Dettenwanger, <u>Anne Spencer Ross</u> , Enrique Doster Pablo Rovira, Zaid Abdo, Kenneth L. Jones, Jaime Ruiz, Keith E. Belk, Paul S. Morley, Christina Boucher NUCLEIC ACIDS RESEARCH, VOL. 45, ISSUE D1, 4 JANUARY 2017, PP. D574–D580	2016

Tweet!—and I Can Tell How Many Followers You Have 2014
Christine Klotz, [Annie Ross](#), Elizabeth Clark, Craig Martell
RECENT ADVANCES IN INFORMATION AND COMMUNICATION TECHNOLOGY, VOL. 265, PP. 245-253

P50 Sensory Gating in Infants 2013
[Anne Spencer Ross](#), Sharon Kay Hunter, Mark A Groth, Randal Glenn Ross
JOURNAL OF VISUALIZED EXPERIMENTS, 50065

Assessment of Statistical Methods for Water Quality Monitoring in Maryland's Tidal Waterways 2013
Rosemary K. Le, Christopher V. Rackauckas, [Anne S. Ross](#), Nehemias Ulloa
SIAM UNDERGRADUATE RESEARCH ONLINE, VOL. 6

WORKSHOPS

Use Cases and Impact of Audio-Based Virtual Exploration 2019
Anne Spencer Ross, Edward Cutrell, Alex Fiannaca, Melanie Kneisel, Meredith Ringel Morris
POSITION PAPER, CHI 2019 BLIND NAVIGATION WORKSHOP

An Epidemiology-Inspired, Large-Scale Analysis of Mobile App Accessibility 2018
Anne Spencer Ross
ASSETS 2018 DC PARTICIPANT

POSTERS AND PRESENTATIONS

Supporting Equity in Smartphone Accessibility with Third-Party Repair Tools 2016
Anne Spencer Ross
ACM STUDENT RESEARCH COMPETITION, GRACE HOPPER CELEBRATION, AWARDED 2ND PLACE, [POSTER, PRESENTATION]

Using Bayesian Statistics on Twitter Feeds to Classify Twitter Users 2014
[Anne Ross](#), Elizabeth Clark, Christina Klotz, Craig Martell
CELEBRATE UNDERGRADUATE RESEARCH AND CREATIVITY SHOWCASE, COLORADO STATE UNIV. [POSTER]

Using Bayesian Statistics on Twitter Feeds to Classify Twitter User 2014
[Anne Ross](#), Elizabeth Clark, Christina Klotz, Craig Martell
AMERICAN MATHEMATICAL ASSOCIATION'S SECTIONAL MEETING, [PRESENTATION]

Water Quality Monitoring in the Chesapeake Bay 2013
[Anne S. Ross](#), Rosemary K. Le, Christopher V. Rackauckas, Nehemias Ulloa, Sai Popuri, Nagaraj Neerchal, Brian Smith
CELEBRATE UNDERGRADUATE RESEARCH AND CREATIVITY SHOWCASE, COLORADO STATE UNIV. [POSTER]

A Powerful New Tool for Visualizing Water and Habitat Quality Data 2012
Brian Smith, Rosemary K. Le, Christopher V. Rackauckas, [Anne S. Ross](#), Nehemias Ulloa, Sai Popuri, Nagaraj Neerchal
MARYLAND WATER MONITORING COUNCIL'S ANNUAL CONFERENCE [POSTER]

Visualization and Analysis Tool for Water Quality Monitoring in the Chesapeake Bay 2012
[Anne S. Ross](#), Rosemary K. Le, Christopher V. Rackauckas, Nehemias Ulloa, Sai Popuri, Nagaraj Neerchal, Brian Smith
ROCKY MOUNTAIN CELEBRATION OF WOMEN IN COMPUTING [POSTER]

A Powerful New Tool for Visualizing Water and Habitat Quality Data 2012
Brian Smith, Rosemary K. Le, Christopher V. Rackauckas, [Anne S. Ross](#), Nehemias Ulloa, Sai Popuri, Nagaraj Neerchal
ATLANTIC ESTUARINE RESEARCH SOCIETY FALL MEETING [POSTER]

Water Quality Monitoring of Maryland's Tidal Waterways 2012
Anne S. Ross, Rosemary K. Le, Christopher V. Rackauckas, Nehemias Ulloa, Sai Popuri,
Nagaraj Neerchal, Brian Smith
SUMMER UNDERGRADUATE RESEARCH FEST [POSTER]

Using Video to Teach Research Methods 2011
Anne Spencer Ross, Mark A Groth, Sharon Kay Hunter, Ali Newton, Kim Muhlhauser,
Elizabeth Calvin, Randal Glenn Ross
CONTE CENTER SUMMER RETREAT, AWARDED TOP POSTER [POSTER]

Chimeric Animal Stroop Task for Young Children 2011
Anne Spencer Ross, Mark A Groth, Sharon Kay Hunter, Kim Muhlhauser, Elizabeth Calvin, Randal Glenn Ross
DEVELOPMENTAL PSYCHIATRY RESEARCH LAB'S WEBSITE, UNIV. OF COLORADO DENVER [INSTRUCTIONAL VIDEO]