

## Qualifications Summary:

### > Education:

- PhD Computer Science, University of Nevada, Reno, 2017  
*Dissertation: Accessibility of Spatial Information (Focus: Human Computer Interaction)*
- M.S. Artificial Intelligence, University of Texas, Austin, 2025-Present
- BA Philosophy & English Literature, UC Davis, 2004

- > 4.5 years of experience in a research environment
- > 5+ years of experience in Software Development
- > 2+ years of experience designing initial feature specs, building backend APIs, writing frontend code, and overseeing ongoing improvements for launched Amazon products.

### Expertise:

*Research:* Frameworks | Experimental Design | Psychophysics & Threshold Detection | Human Subject Testing | Spatial Navigation | Qualitative and Quantitative Data Collection | Motion Tracking & Kinematics Analysis | Prototyping  
Descriptive & Analytical Modeling

*User Experience:* Human Computer Interaction | Ergonomics | Accessibility | Health & Safety | Reliability & Security  
Ease of Learning | Human Centered Design | Multisensory Interactions

*Project Management:* Business Requirements | High-throughput Data Set Analysis | Embedded Systems Design & Integration  
Machine Learning | Cloud Computing

### Communication, Team, Organization Skills:

- > Extensive experience writing technical research papers, technical journal articles, presentations, technical reports, software documentation, memorandum, launch requirements, user requirements, and user training manuals.
- > Experience teaching and mentoring undergraduate students in research studies, and on research papers.
- > Excellent team and organization skills - highly effective working with scientific, technical and non-technical team members and as a productive individual contributor. Able to communicate effectively with technical and non-technical individuals at all levels.
- > Exceptional verbal, presentation, and interpersonal skills.

### Technical Skills:

- > *Languages:* Python, C/C++, JavaScript, Java, CSS
- > *Tools & Platforms:* Git, pytest, Conda, NumPy, SciPy, pandas, Matplotlib, React, Node.js, Linux, AWS, Emacs IDE
- > *Collaboration:* Meets, Slack

## Employment

### Software Engineer • Amazon, Bellevue, WA

6/2019-6/2022

Research, design and development of Amazon Luna across full product life-cycle:

- Conducted research in traffic prediction. Developed, designed and built a machine learning prediction system on the Amazon Luna server infrastructure team using SDLC methodologies. Developed code for GUIs, backend servers, and hardware integration.
- Worked with stakeholders to identify, define and document requirements.
- Designed and developed high-throughput data sets that track over 15,000 metrics with millions of data points.
- Worked with cross functional teams including business team, user interface team, streaming team, integration team and AWS team to ensure software stability, continuity, and customer satisfaction.
- Created APIs for Alexa and Luna developers.
- Alexa Accessibility team member responsible for migrating, updating and expanding the Show and Tell service - allowing customers to hold up an item and use computer vision Alexa to identify products.

### Software Engineer • Microsoft, Redmond, WA

6/2017-6/2019

Software development, notification system design, development and bug tracking for accessibility to ensure ADA compliance:

- Worked with business stakeholders to identify, define and document requirements.
- Used SDLC methodologies in the design and development of all software and systems.
- Worked on the integration team interfacing with multiple teams including the business team, and the MS Word, PowerPoint, Excel, and Outlook teams to ensure software stability, continuity, and customer satisfaction.
- Increased the accessibility of the MS Office UI elements that are shared across all Office apps

**Graduate Research Assistant • Dept of Psychology, University of Nevada, Reno** 9/2016- 5/2017

Conducted research tracking finger movement on android tablet and android smart watch screens:

- Human subject testing of visually impaired individuals - analyzing cognition, motor control and movement.
- Tracked psychophysical threshold metrics – collecting, analyzing and interpreting the data and producing qualitative and quantitative analysis.

**Software Engineering Intern • Google, New York, NY** 5/2016-8/2016

Designed and developed a full stack system that used computer vision to describe images on the web for visually impaired users. Served as a member of the Chrome accessibility team. The system was programmed into the Chrome browser for computer vision accessibility and used SDLC methodologies.

**Graduate Research Fellowship • Dept of Computer Science, University of Nevada, Reno** 12/2013- 5/2016

- Analyzed multi-sensory perception, cognition, motor control and movement.
- Developed software that allows individuals to draw diagrams and do geometry on touch screens with multi-sensory functionality - audio, visual, touch.
- Conducted research analyzing outdoor spatial navigation on an Android Phone and Android SmartWatch. Collected data tracking step movement, body orientation, timing, and qualitative experience of subjects. Created a prototype of a navigation system on the devices to guide users to multiple GPS locations using haptic vibration, touch and auditory feedback.
- Investigated use of binaural sound on touch screens to guide users through maps. Carried out human subject testing, collected finger movement and time data, and conducted qualitative interviews of subjects.
- Surveyed touch screen research for individuals with disabilities to identify future accessibility research.
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**Software Engineer/Research Intern • Naval Research Laboratory, DOD, Washington, DC** 5/2012-8/2012

- Programmed new semantics on real time embedded systems research project to discover ways of including explicit timing requirements in the software engineering lifecycle.
- Used SDLC methodologies in the design and development of the software systems.
- Developed new design methodologies for instrument integrations.

**Web Intern • Public Information Office, CA Dept. of Financial Institutions, Sacramento, CA** 7/2011- 5/2012

With a team of four interns, developed a new website and database for public financial resources. Maintained internet and intranet websites and servers.

## Education

**M.S., Artificial Intelligence** • University Of Texas, Austin • January 2025-Present

**PhD, Computer Science** • University Of Nevada, Reno • May 2017

60 units in Computer Science • CSU, Sacramento • GPA 3.96 • December 2012

**BA, Philosophy and English Literature** • UC Davis • May 2004

## Awards

*Fellowship*, National Science Foundation • 2013-2017

*Scholarship Recipient*, Google Lime • 2014

*Scholarship Recipient*, Dale M. Schoettler - CSU • 2012

*Scholarship Recipient*, Gerald Drake Memorial Scholarship • 2012

*Scholarship Recipient*, National Federation of the Blind • 2012

*Scholarship Recipient*, California Counsel of the Blind Scholarship • 2012

## Publications & Presentations

William Grussenmeyer, Jesel Garcia, Eelke Folmer, and Fang Jiang. Evaluating the Accessibility of the Job Search and Interview Process for People who are Blind and Visually Impaired. W4a Conference 2017.

William Grussenmeyer and Eelke Folmer. Accessible Touchscreen Technology for People with Visual Impairments: A Survey. Transactions on Accessible Computing. 2017. Vol. 9, Issue 2.

William Grussenmeyer, Jesel Garcia, and Fang Jiang. 2016. Feasibility of Using Haptic Directions through Maps with a Tablet and Smartwatch for People who are Blind and Visually Impaired. MobileHCI '16.

William Grussenmeyer and Eelke Folmer. 2016. AudioDraw: User Preferences in Non-visual Diagram Drawing for Touchscreens. W4A '16.

Grussenmeyer, W., Quijano, L., Jiang, F. (2015). Tactile perception of spatial distance in blind humans. Poster presented at the OSA Fall Vision Meeting, San Jose, CA.

## Research Abstracts

### [Accessible Touchscreen Technology for People with Visual Impairments:](#)

Touchscreens have become a de facto standard of input for mobile devices as they most optimally use the limited input and output space that is imposed by their form factor. In recent years, people who are blind and visually impaired have been increasing their usage of smartphones and touchscreens. Although basic access is available, there are still many accessibility issues left to deal with in order to bring full inclusion to this population. Many of the accessibility problems are complex; in the past decade, various solutions have been explored. This article provides a review of the current state of the art of touch screen accessibility for people with visual impairments and identifies new directions for research.

### [Feasibility of using haptic directions through maps with a tablet and smartwatch for people who are blind and visually impaired](#)

In order to navigate through the world, people who are blind and visually impaired typically use maps through either textual directions or tactile printouts. However, visual maps on a touchscreen are not accessible to this population. Two prototypes were designed to test users' ability to trace graphical lines and directions through maps on a touchscreen using haptic feedback from an Android smart watch and tablet. With the first prototype, we show that blind and visually impaired users had lower threshold than sighted users for determining the distance between two lines on a touchscreen, suggesting their enhanced ability to form representations of spatial distance from tactile vibrational cues. With the second prototype, we show that it is feasible for blind and visually impaired users to follow directions through graphical maps based on vibrational cues. We believe these results show that our prototypes have the ...

### [Evaluating the accessibility of the job search and interview process for people who are blind and visually impaired](#)

There is a 70% unemployment rate for people who are blind and visually impaired in the United States. In order to discover if the accessibility of the job search and interview process plays a role in the unemployment of this population, we interviewed people who are blind and visually impaired about their recent experiences regarding the job search and interview process. We discovered that there are many accessibility issues that can impact success in obtaining a job, including the inaccessibility of job applications, pre- and post-interview tests, and accommodations during the interview. We also found that often the employee onboarding, the process which helps new hires acclimate to a new environment, can be inaccessible to people with visual impairments. Based on these interviews, we developed new guidelines for employers.

## [AudioDraw: user preferences in non-visual diagram drawing for touchscreens](#)

It can be very difficult and sometimes impossible for people who are blind to create visual diagrams on their own. Even with sighted assistance, it can be difficult to verbally convey the visual image in one's mind. We conducted a survey to determine the need of people who are blind to create their own diagrams. Based on this survey, we created a preliminary design probe app on a tablet and revised the prototype through preliminary user feedback. Then, using this second app, we conducted a design probe study with 8 participants who are visually impaired and interviewed them about the potential of using touchscreens to create diagrams. Our results show that most participants were enthusiastic about the possibility of creating their own diagrams via a touchscreen and felt that this also makes touchscreens more accessible to them, creating more inclusion for them in the use of touchscreens.

## [Draw and drag: Accessible touchscreen geometry for students who are blind](#)

The drawing of geometric shapes, such as rectangles or triangles of varying sizes, in geometry classes is inaccessible to blind students. Most solutions to this inaccessibility are inaccurate, low tech, time consuming, or require assistance. Draw and Drag is a research project to test the feasibility of using touchscreens to allow students who are blind to do their geometry homework easily and quickly without any assistance.

## [Tactile Perception of Spatial Distances in Blind Humans](#)

Blind individuals show superior abilities in auditory spatial processing (see Collignon et al. 2009 for a review). Similarly blind braille readers show heightened tactile spatial acuity (eg, Von Boven et al., 2000; Wong et al., 2011). Here we examined whether blind individuals show enhanced ability to integrate tactile vibration in order to estimate the relative displacement between the finger and surface.