

Andrew Zhang

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EDUCATION

- **University of Washington** Seattle, WA
M.S. Computer Science *Expected Graduation: June 2024*
 - Relevant Coursework: Human-Computer Interaction, Statistical Methods
- **University of Washington** Seattle, WA
B.S. Computer Science: Data Science; GPA: 3.94 *Graduated: June 2023*
 - Magna Cum Laude, Dean's List all quarters
 - Recipient of Purple & Gold Scholarship
 - Relevant Coursework: Machine Learning, Natural Language Processing, Deep Learning, Artificial Intelligence, Data Visualizations, Database Systems

PUBLICATIONS

- Ather Sharif, **Andrew M. Zhang**, Katharina Reinecke, and Jacob O. Wobbrock. 2023. *Understanding and Improving Drilled-Down Information Extraction from Online Data Visualizations for Screen-Reader Users*. In Proceedings of the 20th International Web for All Conference (pp. 18-31). Best Technical Paper Award
- Ather Sharif, **Andrew M. Zhang**, Anna Shih, Jacob O. Wobbrock, and Katharina Reinecke. 2022. *Understanding and Improving Information Extraction From Online Geospatial Data Visualizations for Screen-Reader Users*. In Proceedings of the 24th International ACM SIGACCESS Conference on Computers and Accessibility (pp. 1-5).

TECHNICAL SKILLS

- **Languages:** Python, Java, Go, C, JavaScript, HTML, CSS, SQL, R, OCaml, Racket
- **Tools/Frameworks:** Git, React, Spark, Tableau, Spring, Docker, Kubernetes, Splunk, PyTorch, TensorFlow, Keras

RESEARCH EXPERIENCE

- **Graduate Research Assistant** Seattle, WA
UW Interactive Data Lab - Prof. Jeffrey Heer & Luke Snyder *September 2023 - Present*
 - Research the improvement of scientific communication through dynamic visualizations
 - Integrate DIVI, a novel approach to automatically orchestrating interactions with static visualizations, into Living Papers, a toolkit for creating scholarly documents
- **Graduate Research Assistant** Seattle, WA
UW DUB - Prof. Jacob Wobbrock & Ather Sharif *September 2023 - Present*
 - Explore and implement tools that personalize screen reader users' interactions with online data visualizations
 - Conduct formative need-finding studies and iteratively test prototypes
- **Undergraduate Research Assistant** Seattle, WA
UW Interactive Data Lab - Prof. Jeffrey Heer *January 2023 - June 2023*
 - Enhanced reading augmentation within Living Papers, an authoring tool for scholarly communication
 - Created a generalized component for tooltips, which supports displaying the title, authors, conference, and summary of inline citations within research papers
 - Designed a documentation for Living Papers to guide users through the syntax and setup
- **Undergraduate Research Assistant** Seattle, WA
UW DUB - Prof. Jacob Wobbrock, Prof. Katharina Reinecke, Ather Sharif *November 2021 - November 2022*
 - Extended granular information extraction for VoxLens: a JavaScript plug-in tool that improves the accessibility of online data visualizations for the visually impaired through voice-activated commands
 - Conducted role, longitudinal, and task-based user studies with screen-reader users to understand preferred methods of online data visualization exploration and experiences with VoxLens
 - Discovered that with VoxLens, screen-reader users experienced 50% lesser interaction time and 164% greater information extraction accuracy compared to without VoxLens
 - Second-authored publications at ASSETS 2022 and received the Best Technical Paper award at Web4All'2023

• Undergraduate Researcher

Seattle, WA

Center for Digital Arts and Experimental Media - Prof. Tivon Rice

November 2020 - August 2021

- Studied the accessibility of machine learning in art and music communities
- Researched and implemented neural style transfer, an artistic application of neural networks that generates new images based off content and style images
- Compiled a document with principal investigator outlining the design process of 4+ convolutional and recurrent neural networks using Jupyter Notebooks and TensorFlow along with concept diagrams and code examples

TEACHING EXPERIENCE

• CSE 312: Foundations of Computing II

Seattle, WA

Paul G. Allen School of Computer Science & Engineering

September 2023 - Present

- Graduate teaching assistant for Instructor Rachel Lin
- Course focused on discrete and continuous probability, random variables, and statistics

• CSE 373: Data Structures and Algorithms

Seattle, WA

Paul G. Allen School of Computer Science & Engineering

March 2023 - June 2023

- Undergraduate teaching assistant for Instructor Kasey Champion
- Course focused on core data structures such as linked lists, trees, tries, heaps, graphs as well as algorithms such as DFS, BFS, Dijkstra's, and quicksort

• CSE 123: Introduction to Computer Programming III

Seattle, WA

Paul G. Allen School of Computer Science & Engineering

January 2023 - March 2023

- Undergraduate teaching assistant for Instructor Brett Wortzman
- Course focused on the implementation and complexity analysis of data structures and algorithms using linked references, recursion, and inheritance

• CSE 143: Computer Programming II

Seattle, WA

Paul G. Allen School of Computer Science & Engineering

March 2022 - June 2022

- Undergraduate teaching assistant for Instructor Kevin Lin
- Course focused on data abstraction and encapsulation including stacks, queues, linked lists, and recursion

• CSE 142: Computer Programming I

Seattle, WA

Paul G. Allen School of Computer Science & Engineering

January 2022 - March 2022

- Undergraduate teaching assistant for Instructor Brett Wortzman
- Course focused on procedural programming and basic control structures such as methods, parameters, if/else statements, loops, and arrays

WORK EXPERIENCE

• Software Engineering Intern

San Jose, CA

Splunk

June 2023 - September 2023

- Refined user searching in Splcore Hub, an internal web application that interactively tracks GitLab CI/CD pipelines for Splunk Enterprise builds and releases
- Implemented a search bar and filters using JavaScript and React for the user interface and Go and OpenAPI to query the PostgreSQL database, thus greatly reducing time taken for developers to find specific pipelines
- Worked closely with the DevPlat team to patch an urgent Splunk log injection vulnerability by performing package testing on all 12 platforms for the release of Splunk Enterprise versions 8.2.11.2, 9.0.5.1, and 9.1.0.2.
- Reduced top-level arguments in package testing workflow templates by 43% using Kubernetes ConfigMaps

• Software Engineering Intern

Seattle, WA

The Walt Disney Company

June 2022 - December 2022

- Identified methods of anomaly detection for third party users to allow Disney Enterprise Technology to efficiently and accurately determine potential security threats
- Retrieved and stored 4,000+ third-party users' data using Splunk and MySQL, then performed spectral clustering and multidimensional scaling using Python to understand application access patterns and outliers
- Discovered 10+ third-party users exhibiting suspicious application activity that warranted further investigation
- Built an internal Disney GitHub/GitLab search engine using JavaScript and React for the Enterprise Technology Hackathon, placing in the top 6 teams, winning the Early Career award, and presenting to executives