

Ali Toghani

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EDUCATION

University of Washington, Seattle, WA
Bachelor of Science in Computer Science
Awards: The Washington Research Foundation Fellowship 2023-2024

Expected Graduation: Fall 2025
GPA: 3.67

Whatcom Community College, Bellingham, WA
Associates of Arts and Sciences
Awards: Computer Science Disciplinary 2021

Graduated: Spring 2022
GPA: 3.90

RELEVANT EXPERIENCE

Undergraduate Researcher, Dr. Nance Lab, University of Washington, Seattle, WA

July 2020 - Present

- Pioneering research in applying advanced deep learning techniques to Multiple Particle Tracking data, revealing complex features and interactions, recognized by the Washington Research Foundation Fellowship 2023-2024
- Currently a goal of uncovering patterns and interactions and achieving an accuracy of over 85%
- Developing an open-source Python package for MPT data analysis for research collaboration and reproducibility
- Utilizing Equivariant neural networks and machine learning models to enhance prediction accuracy in nanoparticle trajectories

Teaching Assistant, Software Design and Implementation, University of Washington, Seattle, WA

September 2023 – Present

- Led weekly interactive sessions for 30+ students with live demos and presentations, creating a dynamic learning environment
- Hosted regular office hours, providing personalized support and clarifying topics in system designs and software best practices
- Enhanced students' hands-on skills in React through practical exercises, boosting their problem-solving abilities
- Designed and created grading rubrics to ensure fair and consistent assessment of student assignments and projects

Lab Aide, Dr. Silberstein Lab, Fred Hutch, Seattle, WA

September 2022 – Present

- Collaborated in designing compelling data visualizations for a forthcoming publication on stem cell regulation
- Conducted differential gene expression analysis using the DESeq2 R library, extracting insights from experimental Data
- Performed Gene Set Enrichment Analysis to elucidate mechanisms underlying enhanced blood cell production

Computer Science and Math Tutor, Whatcom Community College, Bellingham, WA

November 2020 – August 2022

- Engaged with 200+ students from diverse learning and language backgrounds, providing tailored support in advanced mathematics such as Linear Algebra, and Calculus IV and introductory Java classes

PROJECTS

GameStat Tracker | Python, Typescript, JavaScript, React, Firebase Database | Kingdom1418.com

June 2023 – Present

- Developed a player statistic collection bot to gather statistic for each player in a game server
- Increased efficiency of stat collection by over 300% from 3+ hours to 40 minutes for a userbase of over 500 users
- Created a website using TypeScript and React to provide users with personalized access to their individual and server statistic
- Designed and maintained a secure database structure using Firebase to store and retrieve the collected player stats securely

Learning Center Android App | Java, Android Studios, Firebase Database

November 2020 – August 2022

- Developed an Android app using Java and Android Studio to connect tutors and students within Math Center, reducing the time spent on in-person tutor requests. Goal of increasing efficiency of wait times by over 40%
- Integrated Firebase Database to optimize tutor scheduling, payroll management, and availability tracking for over 60 tutors
- Improved efficiency by enabling students to request 1-on-1 tutors through the app, minimizing wait times and enhancing the overall tutoring experience

SKILLS

Programming Languages: Java, Python, TypeScript, JavaScript, React, Cython, MATLAB, R, C, Swift, HTML, CSS

Databases: Firebase Database, SQLite, SQL, Microsoft SQL server

Tools, Technologies, Frameworks & libraries: Pytorch, Docker, Apptainer, Git, Pandas, NumPy, SciPy, TensorFlow

Cloud & DevOps: AWS, Google Cloud, Microsoft Azure, Heroku