

Aarushi Alreja

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EDUCATION

Honours B.Sc. in Computer Science & Statistics

Sep 2023 – Present

University of Toronto cGPA: 3.60/4.00

Toronto, ON

- **Relevant Coursework:** Software Engineering, Systems Programming, Algorithm Design & Analysis, Information Security, Software Design, Regression Analysis, Object-Oriented Programming

RELEVANT EXPERIENCE

Teaching Assistant

Aug 2025 – Present

University of Toronto

Toronto, ON

- Lead weekly tutorials for over 35 students and regular office hours for Introduction to the Theory of Computation.
- Collaborate with faculty to improve course delivery, sharing insights on common student challenges and potential curriculum refinements.
- Grade 200+ assignments and exams, with attention to detail and accuracy, ensuring consistent results.

Research Assistant

Aug 2025 – Present

University of Toronto, Supervisor: Professor Rutwa Engineer

Toronto, ON

- Research socially responsible computing pedagogy in introductory CS, analyzing over 70 academic sources to identify effective curriculum practices.
- Conduct qualitative coding of 300+ student responses to evaluate how ethics can be integrated into CS education.
- Collaborate with faculty on research design and contribute to drafts for conference publications.

Data Science SkillsBuild Intern

June 2024 – Aug 2024

IBM

Remote

- Developed a supervised ML model in Python (Scikit-learn, Pandas, NumPy) to analyze energy consumption data, connecting findings to sustainability goals.
- Performed exploratory data analysis and visualized patterns with Matplotlib, Seaborn, Tableau, and IBM Watson Studio.

PROJECTS

Interactive WebR Tutorials | R, JS, Quarto, WebR, Docker

Aug 2025 – Present

- Implement interactive Statistics course tutorials with auto-grading and hints to improve student learning while practicing R coding with real-time feedback.
- Work with UofT Statistics faculty to align content with the curriculum and improve accessibility.

AR Museum - Augmented Reality Web App | React, AR.js, Firebase, A-Frame, OAuth

Feb 2025

- Built an interactive AR web app for DeerHacks where users can leave text and drawings in real-world locations, viewable in augmented reality.
- Implemented Google OAuth login, live location tracking, and messaging features within a React dashboard.
- Integrated A-Frame + AR.js for rendering AR content, and used Firebase NoSQL + Google Maps API to store and display user-generated AR data.

Mysh - Custom Linux Shell | C, Linux, Git, AddressSanitizer

Jan 2025 – Apr 2025

- Built a fully functional Linux shell in C supporting built-in commands (ls, cd, cat, wc), pipelines, background processes (&), and signal handling.
- Implemented process management, file system navigation, and client-server networking for system access.
- Developed Makefiles with debugging and memory-safety flags; tested with AddressSanitizer to ensure robustness.

TECHNICAL SKILLS

Languages: Java, Python, C, Bash, SQL, Javascript, TypeScript, PHP, Shell Scripting (zsh/sh), HTML/CSS, R, Quarto

Frameworks: React, NodeJS, JUnit, FastAPI, Flask, Firebase, DAX, YAML, XML, Express.js, Wordpress

Developer Tools: Git, Docker, LaTeX, LLMs, RStudio, Google Cloud Platform, Visual Studio

Libraries: pandas, NumPy, Matplotlib, Seaborn, Scikit-learn, PyTorch, TensorFlow