

# Mohammad Shahnawaz

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## EDUCATION

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### University of California, Berkeley

May 2025

*Bachelor of Arts in Computer Science*

*GPA: 3.70*

- Awards: Dean's List Fall 2021, Spring 2022, Fall 2022, Spring 2023, Fall 2023
- Structure and Interpretation of Computer Programs, Data Structures and Algorithms, Discrete Mathematics and Probability, Machine Learning, Information Devices and Systems, Linear Algebra & Differential Equations, Machine Structures, Efficient Algorithms and Intractable Problems, Computer Security, Embedded Systems, Introduction to Artificial Intelligence

## TECHNICAL SKILLS

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**Languages:** Java, Python, C, C++, SQL, JavaScript, TypeScript, HTML, CSS, Rust, Golang, Risc-V

**Frameworks:** Angular, JUnit, Material-UI, FastAPI

**Developer Tools:** Git, Docker, VS Code, IntelliJ, Photoshop, KiCad

**Misc.:** Node.js, Mongo, AWS Services, React, pandas, NumPy, TensorFlow, PyTorch

## EXPERIENCE

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### SWE Intern, Amazon Web Services

May 2024 – Aug 2024

*Amazon*

*New York City, NY*

- Developed a secure file transfer solution AWS teams to securely share files with external companies using AWS S3, Step Functions, Cloudwatch, CloudFormation, Lambda, DynamoDB, and KMS
- Designed and implemented a pipeline which downloads files, scans for malware, performs over 50+ data transformations, creates new files, and uploads them to 12+ locations based on the input file
- Extensively tested, designed metrics and alarms, added a CloudWatch dashboard that continuously monitored the pipeline for errors, and conducted a threat model assessment via penetration testing
- Eliminated over 1,600 hours of manual work per year

### Graduate Student Instructor, Data Structures Class

Jan. 2023 – May 2024

*University of California, Berkeley*

*Berkeley, CA*

- Lectured bi-weekly on data structures to 60+ students in interactive sections with problem-based worksheets
- Created custom course content to aid in student learning (i.e., extra practice questions, video walkthroughs, conceptual guides, etc.) and answered Edstem question for a class of 2000 students
- Upgraded course software, and website, created and reviewed content, proctored and graded exams

### Graduate Student Researcher

Aug. 2023 – May 2024

*University of California, Berkeley*

*Berkeley, CA*

- Spearheaded a project to acquire and provide high-tech equipment and software access to low-income students
- Designed and taught workshops on using advanced technology and software, including VR, Adobe Suite, Final Cut, Unreal Engine, Jupyter Notebooks, Maya, and Blender
- Assisted Prof. Emma Fraser in a comprehensive literature review on best teaching practices in computer science

### Researcher, ACELABS

Jan. 2023 – Dec. 2023

*University of California, Berkeley*

*Berkeley, CA*

- Collaborated with Prof. Armando Fox and Prof. Dan Garcia on enhancing PrairieLearn's online elements to improve student learning
- Developed a graph builder and grader using HTML, Angular, and JavaScript, enabling professors to create and auto-grade various graph questions including BFS, DFS, and Prim's
- Contributed over 10,000 lines of code to an established codebase via Git

## PROJECTS

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### World Generation Algorithm | *Java, OOP, JUnit, Maven, Git, Raspberry Pi, React*

Aug. 2022 – Present

- Developed an algorithm to generate a pseudo-random 2D world featuring a playable character, interactivity, multiple floors, enemies, a health system, and a saving feature
- Implemented a crafting system with over 1,000 recipes and materials
- Deployed the project on the class website using a React front-end and a Raspberry Pi server