

# ADNAN AMAN

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## EDUCATION

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**University of California, Berkeley**

*Bachelor of Arts in Computer Science*

**August 2021 – May 2025**

GPA: 3.7/4.0

### Relevant Coursework:

Operating Systems, Machine Learning, Database Systems, Computer Security, Networks, Algorithms, Computer Architecture, Computer Vision, Data Structures, Optimization Models in Engineering, Probability for Data Science

## EXPERIENCE

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### Software Engineer Intern

*Microsoft (Azure ML)*

May 2024 – August 2024

Redmond, WA

- Designed and implemented a large-scale distributed tracing infrastructure using Go and Python for ML inference endpoints, reducing system debugging time by 40% and generating annual operational cost savings of \$500K
- Developed comprehensive service monitoring capabilities by integrating OpenTelemetry SDK with Envoy proxy configurations, enabling end-to-end visibility and enhanced debugging across distributed microservices
- Created a real-time trace visualization and monitoring dashboard supporting 3M requests per second with custom instrumentation layers, decreasing mean time to resolution by 25% for production incidents
- Implemented automated CI/CD pipelines with reusable deployment templates using Azure DevOps, improving deployment reliability by 30% and standardizing release processes across 15+ microservices

### Academic Instructor

*University of California, Berkeley*

June 2023 – August 2023

Berkeley, CA

- Mentored 200+ students in UC Berkeley's Data Structures course, providing technical guidance in Java
- Conducted weekly office hours and lab sections, helping students debug code and understand core algorithms
- Created supplemental learning materials that improved student project scores by 25% across 4 major assignments

### Technical Instructor

*CodePath*

August 2021 – January 2022

Irvine, CA

- Mentored 35 students in full-stack Android development through code reviews, achieving 95% completion rate
- Led technical workshops on REST APIs and MVC patterns, resulting in 30% improvement in final project scores
- Developed comprehensive Android development guides used by 150+ students across multiple course sections

## PROJECTS

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### Pintos Operating System | C

September 2024 – December 2024

- Developed an operating system by extending a barebones kernel to support userspace processes, multithreading, and efficient memory management, while handling page faults and implementing synchronization primitives
- Implemented strict priority thread scheduling, alongside efficient timer mechanisms and deadlock avoidance strategies, significantly enhancing system robustness, responsiveness, and performance under different workloads
- Designed and integrated a comprehensive file system with path resolution, buffer cache, hierarchical directories, file extensions, and complete path navigation, optimizing file I/O operations and enhancing system functionality

### Talking-Oski | Next.js, React, Tailwind CSS, MongoDB | CalHacks 2024

October 2024

- Created campus assistant using Next.js and React, enabling real-time voice interactions for visually impaired
- Designed event tracking system with MongoDB, implementing automated scraping of daily campus activities
- Implemented comprehensive speech processing pipeline integrating text-to-speech and voice recognition capabilities

## ACTIVITIES AND AWARDS

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ValleyHacks 2022: Won 2nd place for developing an interactive blockchain visualization system for crypto education

CSM Mentor: Guided 20+ CS students in data structures and algorithms, maintaining 90% satisfaction rate

CalHacks 2024: Developed an AI-powered campus assistant for events and campus info, used by 100+ students

## TECHNICAL SKILLS

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**Languages:** Java (5 yrs), Python (4 yrs), C (3 yrs), Go (2 yrs), TypeScript/Javascript (1 yr), SQL, Rust, x86 Assembly

**Libraries & Frameworks:** React, Next.js, Node.js, Express.js, OpenTelemetry, PyTorch, JUnit

**Developer Tools:** Git, Docker, AWS, Azure, MongoDB, Linux, Valgrind, GDB, Bash

**Machine Learning:** PyTorch, Scikit-Learn, OpenCV, NumPy, Pandas, SciPy