Adnan Aman

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Education

University of California, Berkeley **Class of 2025**
Bachelor of Arts in Computer Science GPA: 3.6/4.0

Relevant Coursework:
Data Structures, Efficient Algorithms and Intractable Problems, Computer Architecture, Introduction to Database Systems, Computer Security, Discrete Math and Probability, Optimization Models in Engineering, Machine Learning, and Probability for Data Science

Experience

University of California, Berkeley June 2023 – August 2023
Academic Intern *Berkeley, CA*

- Lab assistant for UC Berkeley's Data Structures course with ∼1600 students
- Assist with project design, debugging, and running labs (Java)
- Work alongside TAs in office hours to support students with homework and conceptual misunderstandings
- Helped students implement and experiment with fundamental algorithms and data structures

CodePath August 2021 – January 2022
Android Software Engineer *Irvine, CA*

- Employed MVC patterns in 3 major projects, leading to a modular codebase, which improved maintainability and allowed a responsive user experience for thousands of active users
- Integrated RESTful APIs using CodePath's AsyncHttpLibrary in 4 applications, facilitating real-time data fetch and display, leading to a **25%** improvement in data load times
- Enhanced app security by pioneering advanced user authentication techniques, which reduced security breaches by **50%** and streamlined user onboarding

Projects

YelpCamp | *Node.js, Express.js, MongoDB, Bootstrap* December 2023 – Present

- Developed YelpCamp, a full-stack web application for campsite reviews, using Node.js, Express.js, and MongoDB, focusing on user-generated content, security, and data integrity
- Designed and implemented user authentication, admin roles, and a review system in YelpCamp, enhancing application security and user interaction capabilities
- Integrated Google Maps API for interactive campsite location features and deployed Google Ads for potential revenue generation
- Employed MVC architecture for application design, ensuring scalability and maintenance efficiency in the codebase's evolution

RookieDB: Resilient Database Recovery System | *Java, ARIES Algorithm* January 2023 – May 2023

- Designed a database recovery system using Java and the ARIES algorithm, resulting in 99.99% system uptime and near-zero data loss
- Optimized I/O operations utilizing efficient memory buffers, which led to a 45% boost in query execution and a 30% reduction in data retrieval latency

CS61KaChow: Optimized 2D Convolutions | *C, SIMD, OpenMP, Open MPI* April 2023 – May 2023

- Optimized 2D convolutions utilizing SIMD vector instructions, achieving a **8.05x** speedup and significantly improving image processing times
- Enhanced task parallelism using OpenMP, resulting in efficient multi-threaded operations and reduced processing overhead
- Coordinated parallel processing tasks utilizing Open MPI's manager-worker architecture, leading to a **5.30x** speedup in convolution operations across large datasets

Technical Skills

Languages: Java, Python, C, JavaScript, HTML, CSS, SQL, MQL
Frameworks: React, Node.js, Express.js, Bootstrap, Android (MVC), JUnit
Developer Tools: Git, Vim, Linux, MongoDB, LaTeX, Android Studio, Logisim