

# Alexander Mena

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## EDUCATION

### University of Delaware

Bachelor of Computer Science – Systems and networks concentration

Newark, DE

May 2026

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## RELEVANT COURSES

Relevant Coursework: Automata Theory, Discrete Math, Intro to Algorithms, Systems programming, Computer organization, Software development, Operating Systems, Computer Architecture, Computer Networks, Parallel Computing, Intro to Cybersecurity, Computer Security principles and practices, Advanced Web Technologies

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## SKILLS

Languages: C, C++, Java, Python, JavaScript, SQL

Tools & Frameworks: Git, Linux, Docker, npm, nodeJS, Tshark, MPI, Pthreads, Scapy, Spring Boot, React, FastAPI

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## RELATED EXPERIENCE

### Personal projects

#### Banking API

- Designed and implemented a RESTful banking API using Java Spring Boot and PostgreSQL to support account creation, fund transfers, deposits, and transaction history
- Developed service-layer logic for secure inter-account transfers and transaction logging with role-based access control in mind
- Wrote comprehensive unit and integration tests using JUnit and Mockito to validate service behavior and data integrity
- Containerized the application using Docker and configured persistent PostgreSQL storage for deployment-ready packaging

#### Unix Shell

- Developed a custom Unix shell ("desh") in C, supporting built-in commands (cd, pwd, which, list, exit, etc.) and external command execution via fork/exec
- Implemented robust command parsing, tokenization, wildcard expansion, and environment variable management
- Integrated signal handling and process control (SIGINT, SIGTERM, SIGTSTP) using `sigaction`, ensuring shell stability under various user interrupts

#### TCP File Transfer

- Designed and implemented a TCP-based client-server file transfer system in C using custom packet framing and raw sockets
- Developed a protocol with structured headers (count, sequence number) and end-of-transmission detection for robust communication
- Engineered the client to validate file existence, log transfer statistics, and handle transmission errors gracefully

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## OTHER EXPERIENCE

### Chick Fil A

#### Trainer

Newark, DE

January 2020 – August 2024

- Maintained high standards of customer service during high-volume, fast paced operations
- Trained multiple team members on company policies, procedures, and job duties
- Communicated with team members and customers to ensure order accuracy

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## ACTIVITIES

### CS + Social Good

#### Secretary

Newark, DE

September 2024 – present

### Rockbridge Young Life Camp

#### Camp volunteer

Newark, DE

March 2025 – March 2025