

Kenny Nguyen

US Citizen

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EDUCATION

Arizona State University

Tempe, AZ

Master of Science in Computer Science, Accelerated 4+1 Program

Aug 2026 – Dec 2027

Bachelor of Science in Computer Science, GPA: 3.88/4.0

Aug 2022 – May 2026

Relevant Coursework: Operating Systems, Computer Networks, Data Structures and Algorithms, Software QA and Testing, Software Engineering, Foundations of Machine Learning, Computer Organization and Assembly Language

EXPERIENCE

Opportunity Hack

Remote

Software Engineer Intern

May 2025 – Aug 2025

- Collaborated in a 3-person team to architect and develop a full-stack alumni platform for a global community of over **1,000 users**, taking lead on the implementation of the **Next.js** frontend and **Supabase (PostgreSQL)** backend.
- Translated complex UI/UX designs into a dynamic world map using **Mapbox GL JS**, implementing robust state management to resolve data consistency issues and ensure the stable rendering of **1,000+ alumni data points** during real-time filtering.
- Engineered an end-to-end security model by integrating **Clerk** for user authentication and implementing **Row Level Security (RLS)** policies in Supabase to enforce strict data access rules between 'admin' and 'user' roles.
- Built a comprehensive admin dashboard that enabled the migration of **1,000+ legacy records** through a CSV import tool with custom data validation, and integrated **Mailgun** to facilitate targeted bulk-email campaigns to the user base.

PROJECTS

Redis Clone | *Go, TCP Sockets, Concurrency, RESP Protocol*

- Built a **Redis server from scratch** implementing the **RESP protocol**, key-value storage with TTL expiration (PX/EX), and Redis Streams with entry ID validation.
- Engineered **concurrent client handling** using goroutines with **mutex-protected shared storage**, enabling multiple simultaneous client connections on port 6379.

Distributed Storage System | *Python, UDP Sockets, Multi-threading, XOR Parity*

- Architected a **fault-tolerant distributed storage system** implementing **Block-Interleaved Distributed Parity (BIDP)** for redundancy, enabling automatic recovery from single-disk failures using **XOR-based reconstruction** across networked storage nodes.
- Engineered **parallel I/O operations** using multi-threaded socket communication to concurrently read/write data blocks to multiple disks, with thread-safe synchronization and configurable error injection for real-time parity verification.
- Designed a modular **UDP-based protocol** with 23 command handlers across manager, user, and disk processes, managing user registration, DSS configuration, file ownership enforcement, and coordinated recovery operations.

Shell Clone | *Go, Systems Programming, Process Management*

- Developed a **POSIX-like shell** with a REPL, builtin commands (exit, echo, type), and **PATH resolution** for locating executables across system directories.
- Implemented **external program execution** using Go's os/exec with proper stdin/stdout/stderr passthrough and executable permission validation.

TECHNICAL SKILLS

Languages: Go, Python, Java, C++, C, TypeScript, JavaScript, SQL, Kotlin, HTML/CSS

Frameworks & Libraries: Next.js, React, Node.js, Tailwind CSS, Mapbox GL JS, shadcn/ui

Databases & Services: PostgreSQL, Supabase, Clerk, Mailgun

Developer Tools: Git, Linux/Unix, RLS, Vercel, Claude Code

CERTIFICATIONS

CodePath Intermediate Technical Interview Prep (Advanced), Summer 2025