

Toan Pham

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EDUCATION

Arizona State University

Tempe, AZ

Bachelor of Science in Computer Science (Dean's List)

Aug. 2022 – Present

- **Coursework:** Data Structures and Algorithms, Object-Oriented Programming, Software Engineering, Operating Systems, Computer Architecture, Theoretical Computer Science, Discrete Math, Linear Algebra

EXPERIENCE

Software Development Engineer Intern

May 2025 – Jul 2025

OpenKnect

Remote (Halethorpe, MD)

- Architected scalable microservices customer portal using React, Node.js, and PostgreSQL, serving 10,000+ daily users with 99.9% uptime and reducing support tickets by 40%
- Implemented real-time data sync with WebSocket/Redis caching, improving response times by 65% and enabling seamless multi-device experiences

Undergraduate Teaching Assistant

Jan. 2023 – Present

Arizona State University

Tempe, AZ

- Mentor 200+ students in Data Structures/Algorithms and cybersecurity fundamentals, driving a 30% improvement in assessment scores through targeted instruction on algorithmic complexity and secure coding practices
- Developed Python-based grading automation and CTF challenge scripts that enhanced students' understanding of algorithm optimization and low-level system vulnerabilities, increasing practical problem-solving completion rates by 65%

PROJECTS

X Clone | React, Node.js, TypeScript, PostgreSQL, Socket.io

Jun 2024 – Aug 2024

- Built full-stack social media platform supporting 500+ concurrent users with JWT authentication, AWS S3 integration, and real-time messaging via Socket.io using agile development methodologies
- Implemented responsive user interface with Tailwind CSS and Redis caching, optimizing database performance by reducing queries by 70% and API response times by 60%

Clash of Clans Tracker | Swift, SwiftUI, Node.js, PostgreSQL, Redis

Mar 2024 – Jun 2024

- Built full-stack iOS mobile application with Swift/SwiftUI frontend and Node.js backend, integrating third-party APIs to track 5,000+ player statistics with real-time analytics and push notifications
- Implemented Redis caching layer and PostgreSQL database optimization with indexing, reducing API response times by 75% while supporting concurrent data processing for 1,200+ daily active users

Redis Clone | C++, TCP/IP, Multi-threading, Memory Management

Sep 2023 – Dec 2023

- Engineered high-performance in-memory data store in C++ implementing core Redis commands (GET, SET, HSET, EXPIRE) with TCP server supporting 10,000+ concurrent connections using epoll and thread pooling
- Designed custom memory allocator and implemented data persistence with RDB snapshots, achieving 95% Redis compatibility while optimizing memory usage by 30% through efficient data structure design and algorithms

AWARDS

Top 30% in Google Kick Start 2021 – Participated in prestigious Google competition solving Data Structure & Algorithm questions

TECHNICAL SKILLS

Programming Languages: TypeScript, JavaScript, Python, Java, C/C++, SQL (MySQL, PostgreSQL), HTML/CSS
Frameworks & Libraries: React, Next.js, Node.js, Express.js, Socket.io, Tailwind CSS, Discord.js, Prisma ORM, Flask
Developer Tools & DevOps: Git, GitHub, Docker, Jenkins, AWS (S3, EC2, Lambda), Firebase, GCP, Redis, Vite, VS Code, JetBrains IDEs
Databases & Cloud: PostgreSQL, MySQL, MongoDB, Firebase, AWS RDS, Redis