

Bao Nguyen

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PROFESSIONAL SUMMARY

Backend and AI engineer with experience building production systems, including VLM pipelines (**80% cost reduction**), async APIs (**70% latency improvement**), and full-stack applications serving **5,000+ users**. Proficient in Python, FastAPI, PostgreSQL, Docker, and LLM integration. Currently pursuing CS degree at University of Arizona.

SKILLS

- **Languages:** Python, Java, TypeScript, JavaScript, SQL, Dart, C, PHP
- **Technologies:** FastAPI, Docker, PostgreSQL, Git/GitHub, CI/CD, Playwright, Django, Flutter, React, AWS, MongoDB, Cursor
- **Areas:** Backend Development, AI/ML Engineering, Cloud Computing, System Design, Database Design, Test-Driven Development

EDUCATION

University of Arizona, College of Science

Bachelor of Science, Computer Science, Minor in Artificial Intelligence

May 2027

GPA: 3.68

- Coursework: Operating System, Algorithm Analysis, System Programming, Cloud Computing, Computer Organization

PROFESSIONAL EXPERIENCE

Web Developer & Analyst – University of Arizona IT Services

Mar. 2024 – Feb. 2026

- Accelerated deployment speed by **30%** by optimizing GitHub Actions CI/CD pipelines, enabling real-time updates on Pantheon
- Saved **90+ hours** of QA effort by building JavaScript automation detecting **1,000+ broken links** across **4,000 websites**
- Achieved a 10% boost in search rankings and a 5% increase in organic traffic by customizing a Drupal module to align with Schema.org standards

Software Developer Intern – Tucson Loves Music

Aug. 2025 – Dec. 2025

- Built Vision Language Model (VLM) pipeline extracting event data from images at **95% accuracy**, processing **500+ weekly events**
- Reduced AI inference costs by **80%** via PostgreSQL caching with SHA256-based invalidation, preventing duplicate processing of **2,000+ images**
- Built Playwright-based Instagram scraper feeding automated VLM pipeline, eliminating manual event data aggregation of **50+ Instagram profiles**

Software Engineer Intern (Mobile Development) – Phocos Americas Inc.

May 2024 – Aug. 2024

- Increased user engagement by **20%** for a Bluetooth-enabled product by developing interfaces for PhocosLink app (**5,000+ downloads**) using Flutter
- Enabled **3000+ active users** to monitor data in real-time by engineering a Dart-based binary decoder to convert device output into ASCII text
- Developed a SyncFusion-powered analytics dashboard with dynamic daily and monthly visualizations, boosting user satisfaction by **33%**

PROJECTS

RepoExplainer - FastAPI, Docker, React, TypeScript, Vite, PostgreSQL, Cursor

[Source Code](#) - [Demo](#) - [Live Site](#)

Full-stack application that generates AI-powered GitHub repository explanations to help developers understand unfamiliar codebases.

- Boosted explanation quality within a cap by letting an LLM select files from the repo tree, merging with a priority list, and fetching all in parallel
- Replaced a static spinner with 5 live progress steps using Server-Sent Events, backend status callbacks, and frontend EventSource
- Cut analysis latency **~70%** by parallelizing GitHub API calls with async FastAPI; added per-file and total context caps to prevent token overflow

GitHub Second Brain - Python, FastAPI, Docker, Model Context Protocol (MCP), FastMCP

[Source Code](#) - [Demo](#)

A MCP server providing AI with a set of tools to explore GitHub codebases through agentic tool use.

- Implemented a FastAPI backend service hosted on the cloud with API endpoints to handle requests and trigger processing logic on-demand
- Introduced custom MCP server using FastMCP to expose specialized tools and prompts, enabling AI agents to navigate repositories intelligently
- Published a fully containerized and thoroughly documented Docker image to GitHub's Container Registry, receiving **50+ downloads**

Cloud Provisioner - Python, Apache2, Digital Ocean, SQL, MySQL

[Source Code](#) - [Demo](#)

A web application that enables teams to access and control virtual machines from a single dashboard with secure user authentication.

- Designed a RESTful API with Python CGI and MySQL backend to track real-time server status, health checks, and ownership across the platform
- Enforced an authentication system with cookie-based session management and role-based permissions, enabling secure multi-user VM control

Restaurant Management System - Java, Java Swing, JUnit

[Source Code](#)

Desktop application for managing restaurant operations, including orders, table assignments, billing, and sales analytics.

- Optimized retrieval performance by indexing servers, tables, groups, and sales in Java HashMaps, enabling constant-time operational lookups.
- Automated real-time UI updates by wiring Observer callbacks between Java Swing views and backend models, synchronizing table and sales states.
- Strengthened billing reliability by validating payment, tipping workflows, and order-to-bill conversions with 89 JUnit tests across 10 suites.

LEADERSHIP EXPERIENCE

Founder & President, Hack Path Student Association, University of Arizona

Nov. 2024 – Present

- Established and scaled the club to create an inclusive community for students interested in tech (190+ members) through weekly meetings, technical workshops, tech talks (work with alumni from Google, Amazon, Meta), project-building programs, and Discord community
- Coordinated with Career Center and 10+ alumni, department directors, coordinators, advisors to provide career resources and mentorship to students
- Led a technical workshop about developing Chrome extension from scratch for ~ 15 students, resulting in 5 project submissions