

Bharath Babu Jagarlamudi

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EDUCATION

Arizona State University, Ira A. Fulton Schools of Engineering

Aug 2022 – May 2027

B.S. Computer Science; GPA 3.0

Tempe, AZ

- **Technical coursework:** Distributed Software Development (CSE 445), Database Management (CSE 412), Operating Systems (CSE 330), Design and Analysis of Algorithms (CSE 450), Principles of Programming Languages (CSE 340), Human-Computer Interaction (CSE 463)

EXPERIENCE

ALEROQ LLC

May 2026 – Present

Founder and Software Engineer | Vehicle diagnostics and roadside technology venture | aleroq.com

Tempe, AZ

- Designed and implemented a distributed event-driven backend on Firebase Cloud Functions (Node.js) and Firestore with real-time listeners; engineered a fault-tolerant SOS pipeline that runs AI inference, third-party dispatch API calls, and FCM push notifications as atomic serverless operations.
- Integrated the Anthropic Claude API into the diagnostic pipeline with a structured prompt system that parses raw hex DTC codes into JSON with severity scoring, cost estimation, and repair recommendations at under 2 s processing latency.
- Built the Flutter/Dart mobile client with a custom BLE GATT protocol layer implementing an ELM327 OBD2 AT command queue; manages concurrent device state across Vehicle, GPS, and SOS providers with an Observer pattern and O(1) stream dispatch.
- Deployed the Next.js site on Vercel with automated CI/CD through GitHub integration, custom DNS, CDN caching, and production analytics; Google-indexed within 24 hours of launch.
- Authored and filed USPTO provisional patent application No. 64/102,238 covering the system: technical specification, formal claims, abstract, and reference-numbered system diagram to federal formatting standards.

Arizona State University

Oct 2024 – Jul 2025

Applicant Services Frontline Representative | Part-time student position

Tempe, AZ

- Resolved high-volume phone, email, and in-person cases with accurate written documentation and timely follow-up; escalation point for FERPA-sensitive cases, coordinating with supervisors; managed applicant records in Salesforce and PeopleSoft.

SELECTED TECHNICAL PROJECTS

PRDForge | Multi-Agent PRD-to-Code Compiler: Python, LangGraph, Anthropic API, Pydantic, Dart

- Architected a five-agent LangGraph swarm (PM, Architect, Sync, Engineer, QA) compiling natural-language PRDs into graph-validated RFCs, Firestore schema plans, injection-safe security rules, and dart analyze-clean Dart model classes end to end.
- Enforced LLM output integrity with Anthropic structured outputs and strict Pydantic schemas driving constrained decoding; bounded self-repair loops feed exact validation violations back to the model once before raising typed errors.
- Wrote 120 fully offline tests with an injected fake model client and Dart toolchain runner; a deterministic differ gates the Sync agent so unchanged recompiles spend no LLM tokens, and the pure-agent design runs the identical swarm from a BYO-key CLI.

SmartLedger | AI-Powered Transaction Categorizer: Python, FastAPI, PostgreSQL, OpenAI API, React, Docker | [GitHub](https://github.com)

- Built a full-stack fintech dashboard that categorizes bank transactions with GPT-4.1-nano and benchmarks results against a rule-based keyword engine; FastAPI and PostgreSQL REST API stores transaction history, category labels, confidence scores, and model reasoning per transaction.
- Developed the React frontend with a real-time spending donut chart, AI-versus-rule-based comparison chart, and live stats dashboard in Recharts; deployed with Docker Compose and a GitHub Actions CI/CD pipeline for automated build and syntax validation.

Senior Capstone | SkipCourse Backend, API, and Cloud Run Services; five-person team

Fall 2026 – Spring 2027

- Delivering backend architecture, API development, and Google Cloud Run services for industry sponsor SkipCourse LLC across a two-semester engagement under NDA.

ParkUp / ALEROQ Park | Real-Time Smart Parking App: Flutter, Firebase, ESP32, LiDAR, LoRa

- Built and launched a real-time parking availability app as solo founder; integrated ESP32 sensor nodes (LiDAR ranging, NFC, LoRa) with Firestore for live space detection; ran structured user testing studies and iterated the UI/UX on direct feedback sessions.

Linux Kernel Modules | C, Linux Kernel Internals

[dm-cache](#) | [zombie monitor](#) | [VM translator](#)

- dm-cache LRU replacement with kernel linked-list utilities; producer-consumer zombie-process monitor with kernel threads and semaphores; page-table walk translating virtual to physical addresses across present, swapped, and invalid mappings, validated under memory pressure and swapping.

SKILLS

Languages: Python, JavaScript (Node.js), Dart, SQL, C, C++, C#

Backend & Data: FastAPI, Flask, Firebase Cloud Functions, Firestore, PostgreSQL, REST API design, ASP.NET and WCF services

Frontend & Mobile: React, Recharts, Next.js, Flutter

AI Tooling: Claude API structured outputs, OpenAI API, LangGraph, Pydantic validation, offline tests with injected fakes

Delivery & Writing: GitHub Actions CI/CD, Docker Compose, Vercel, Git, technical specification and USPTO patent drafting