Sidharth Anil

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Summary

Software engineer with two years of full-stack experience and an MS in Computer Science, spanning backend services, payments integrations, observability, and web/mobile front ends, plus applied security and ML work in reverse-engineering tooling.

Professional Experience

Software Developer — SMRT Systems *Jul 2024 – Present*
Raleigh, NC | Python, FastAPI, Next.js, ReactJS, React Native, PHP, AWS, Docker, Stripe

- Develop and orchestrate an ecosystem of applications and backend services using Docker and AWS, supporting 100,000+ users across mobile, POS, and kiosk systems.
- Modernized a legacy point-of-sale system by integrating Stripe for transaction processing via REST APIs, reducing system complexity by 80% and enabling a new revenue stream.
- Integrated Datadog across the platform's mobile, POS, and kiosk applications, adding centralized observability, user analytics, and error tracking so issues surface faster and product decisions are backed by real usage data.
- Built a transaction reconciliation system with drift-detection alerting that eliminated recurring payment record discrepancies.
- Shipped a Stripe preauthorization feature that combines small transactions under a single hold, cutting per-transaction fees.
- Built an AI-driven backend service in Python (FastAPI) using MCP (Model Context Protocol) architecture, turning static business reporting into a queryable LLM interface.
- Implemented an automated CI/CD pipeline with A/B rollout for a desktop POS application, replacing a 30+ hour manual process with one-click deployment.

Student Technician — Dept. of CSE, Texas A&M University *Apr 2023 – Jul 2024*
College Station, TX | Python, C++, System Design, Multithreading

- Built a novel binary debugger with custom ML plugin support and visualization tooling for reverse-engineering workflows.
- Created an automation plugin that reduced analyst manual effort by 96% for specific reverse-engineering procedures, diagnosing and resolving root causes across a large existing C++ codebase.

Full Stack Developer Intern — AutoInfer *Jul 2020 – Sep 2020*
Bengaluru, India | ReactJS, TypeScript, Flask, MySQL, MongoDB

- As founding developer, built the backend and frontend of an ML-based invoice data extraction SaaS, designing a multi-tiered architecture that combined staged human review with ML processing.

Education

Texas A&M University
Master of Science in Computer Science, GPA 3.8/4.0 Aug 2022 – May 2024

National Institute of Technology, Calicut
Bachelor of Technology in Computer Science and Engineering, GPA 8.14/10.0 Sep 2017 – May 2021

Technical Skills

- **Languages:** Python, Java, JavaScript/TypeScript, C++, PHP
- **Frameworks & Libraries:** ReactJS, React Native, Next.js, Flask, FastAPI
- **Data & Infrastructure:** PostgreSQL, MSSQL, Redis, Kafka, AWS, Docker, Kubernetes, CI/CD pipelines, Linux, Git
- **APIs & Integrations:** REST API design, GraphQL, MCP (Model Context Protocol), Stripe, Datadog
- **Security & AI/ML:** Reverse engineering, binary analysis, malware analysis, applied ML, AI-assisted development

Open Source Contributions

- **Reflex (Python):** Debugged and fixed a significant bug, tracing it across dependencies (FastAPI and Uvicorn) to an obscure Python/Windows signal-handling issue; written up in a blog post.
- **UV (Rust):** Implemented a test suite utility that isolates test cases from the system's git credential helper.
- **x64dbg (C++):** Added a shortcut that brings register and memory values from a trace into the current window, and modified the launcher to support creating privileged shortcuts.

Projects

Malware Detection Using Machine Learning *1st Place, Evasion Competition*

- Led a team of 4 to build a Random Forest-based Windows malware detector; separately devised an evasion strategy against ML detectors (embedding payloads in images) with a 96% success rate.

Certifications

- RHCSA (Red Hat Certified System Administrator); Red Hat RH124, RH134, and PE124 course completions