

Sapan Reddy Kanamathareddy

www.sapanreddy.com | sapanreddy@usf.edu | github.com/scodes73 | linkedin.com/in/sapan-reddy | Edison, NJ

EXPERIENCE

Camber, Inc.

Sep. 2025 - Nov. 2025

Software Developer Intern

Edison, NJ

- Built an **AI driven** document intelligence pipeline using **Python, LLMs, and vector databases** to extract key parameters from regulatory PDFs, invoices, and shipment logs, reducing manual reconciliation by **50%** and improving planning accuracy.
- Implemented a **Retrieval-Augmented Generation (RAG)** system integrating **1K+ internal documents and structured data**, improving **response relevance and domain accuracy by 35%** during evaluation.
- Engineered robust **ETL pipelines** using **Python (Pandas/NumPy)** for strict **schema validation, processing, and normalizing high-volume unstructured data** to ensure type safety for downstream ML model training.

Zemoso Technologies

Mar. 2021 - Dec. 2023

Software Engineer III

Hyderabad, India

- Architected a complex results dashboard in **React**, implementing **advanced hierarchical filtering, multi-column sorting, pagination, and bulk-selection workflows** to help users efficiently navigate and organize **thousands** of records.
- Engineered a **10x performance boost** in frontend workflows using **client-side caching, selective React hydration, and lifecycle optimizations**, significantly enhancing UX responsiveness.
- Architected **high-throughput asynchronous processing pipelines** using **Python, FastAPI, Kafka, and Redis**, handling **thousands** of background jobs for data ingestion, export generation, and bulk indexing without impacting user-facing API latency.
- Designed a scalable global **state management** architecture using **Redux Toolkit** to orchestrate complex application workflows, reducing unnecessary component re-renders by **40%** and improving interaction latency by **200ms** across deeply nested trees.
- Improved **SDK performance** by reducing bundle size by **44%** and startup latency by **30%**, enhancing **Core Web Vitals, load times, and production observability** via **structured logging (Graylog)**.
- Architected a **headless iframe-based SDK** using **TypeScript** and the **postMessage API**, replacing a legacy **event-driven system** and enabling secure **cross-domain communication** and scalable adoption across client platforms.
- Refactored **100+ React** components to **TypeScript**, using **React Profiler** and **Chrome DevTools** to resolve **memory leaks** and enforce **strict typing**, significantly improving developer experience and application stability.
- Led a **micro-frontend migration** via **Webpack Module Federation** and established **E2E testing (Cypress, Jest)**, achieving **90%+** coverage and reducing regressions by **40%**.

Smart Campus Connect

Jan. 2019 - Jan. 2021

Founding Software Engineer

Hyderabad, India

- Designed a secure **multi-tenant data architecture** using **PostgreSQL schemas** and **complex data models**, enforcing strict data isolation via **JWT-based RBAC** to reduce privilege escalations by **60%**.
- Engineered a **schema-driven** administrative dashboard using **React** and **JSON Schema**, generating **dynamic configuration forms** that enabled non-technical staff to safely modify complex multi-tenant settings without engineering intervention.
- Implemented **isolated-schema multi-tenancy** with **Liquibase migrations**, onboarding **25+** institutions with strong data isolation and simplified tenant upgrades. Built **Spring Batch pipelines** for large-scale CRM data migration with validation and resumability, cutting client onboarding time by **50%**.
- Led backend **performance optimization** through query tuning and **Caffeine caching**, reducing **average API latency by 45%** under peak load. Automated **CI/CD pipelines** using **GitHub Actions**, enabling zero-downtime deployments, a **3x** increase in release velocity, and a **90%** reduction in deployment failures.

SKILLS

Languages: TypeScript, Python, Java, JavaScript, SQL, NoSQL, Ruby

Frameworks & Libraries: ReactJS, Node.js, FastAPI, Spring Boot, Ruby on Rails, Next.js, Redux, Three.js, WebGL, Webpack, TailwindCSS, Apache Kafka, Redis, Cypress, Jest, JUnit

AI / Data: Large Language Models (LLMs), Retrieval-Augmented Generation (RAG), Vector Databases, Document Intelligence, Prompt Engineering, Huggingface, OpenAI, Claude code

Databases & Caching: PostgreSQL, MySQL, MongoDB, Redis, GraphQL

Cloud & DevOps: AWS, Git, GitHub Actions, CI/CD, Docker, Jenkins, Bitbucket, Gitlab

System Design & Practices: Microservices, REST APIs, Server-Side Rendering (SSR), Test-Driven Development (TDD), Agile / Scrum

EDUCATION

University of South Florida

Jan. 2024 – Dec. 2025

Master of Science in Computer Science and Engineering (4.0/4.0 CGPA)

Tampa, FL, US

Jawaharlal Nehru Technological University

Aug. 2017 – Jun. 2021

Bachelor of Technology in Computer Science and Engineering (3.9/4.0 CGPA)

Hyderabad, TS, India

PROJECTS

RawPipeline [↗](#)

A Proof of concept iOS camera application designed to extract Bayer RAW data by strategically bypassing Apple's computational Image Signal Processor (ISP) and multi-frame fusion pipelines (Smart HDR/Deep Fusion). The system prioritizes pure sensor output, specifically 14-bit Bayer RGGB, over processed ProRAW formats. The application leverages a dedicated serial background queue to manage high-bandwidth data writes and complex hardware configurations while maintaining a responsive SwiftUI interface. Key features include lens switching and a DNG extraction pipeline that facilitates manual file management via the iOS Files app.

Skyflow [↗](#)

Skyflow is a data protection platform prioritizing privacy and security. It offers data tokenization, secure data sharing, compliance features, and a developer-friendly API. With Skyflow, organizations can safeguard sensitive data, maintain regulatory compliance, and enable secure data sharing, all while empowering developers to work efficiently. (Client, via Zemoso Technologies) (FinTech, Startup Series B 100M, New York City HQ)

Strateos [↗](#)

The world's first R&D Cloud Automation Platform for faster scientific discoveries available to conduct experiments remotely or command and control your own facilities. Remote control and automated cloud labs that are accessible from a web browser enable scientists around the world to easily access and control new technologies, drug discovery, cell and gene therapy, and synthetic biology workflows. (Client, via Zemoso Technologies) (BioTech, Startup Series B 56M, San Diego HQ)

TriNethra [↗](#)

A Crime registration chatbot system that uses Natural Language Processing to detect user intent and assist citizens in registering crime complaints with BPRD India, supporting text and voice interactions across 21 Indian regional languages. The system includes a ReactJS-based web application and a Flutter mobile application integrated with Dialogflow for multilingual intent detection and conversational flow. A Django-based backend provides role-based access control for citizens, administrators, and law enforcement officials, along with features such as PDF generation, automatic email notifications, voice memo support, and complaint status tracking. Winning submission of Smart India Hackathon 2020.

DripM

The cross-platform mobile application connected to the product prototype can monitor and control the IV flow in healthcare institutions, preventing the potentially lethal blood back-flow into the fusion pipe. Winning submission of General Electric BioAsia 2019 Hackathon.

Portfolio Website [↗](#)

High-performance portfolio website using Next.js, integrating real-time 3D mockup with Three.js, GLSL shaders, and custom WebGL logic to create an interactive background and 3D object interactions. Built a custom MDX-based blog engine with custom hydration and content pre-rendering to support dynamic yet SEO-friendly publishing. Optimized the architecture using server-side rendering (SSR), dynamic imports, code-splitting, and modular components for fast load times and scalability.

HONORS AND ACHIEVEMENTS

- Candidate of **Dean's list** for having a **perfect 4.00 GPA** at University of South Florida.
- Ranked among **top 0.1% out of 150k participants**, Successfully cleared HackWithInfy, TCS Codevita coding challenges.
- Worked as **Founding Software Engineer** on a full-featured college CRM platform, now serving **50,000+ students** across universities in India.
- Won **1st** place at **BioAsia 2019 Hackathon** for developing DripM, an innovative solution in healthcare technology.
- **Runners-up** at **Smart India Hackathon (India's largest hackathon)** for developing a chatbot solution for the Crime Department, Government of Maharashtra.