

SIVANANDH PP

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Software Engineer with hands-on experience building mobile, full-stack, and AI-driven production applications.

EDUCATION

JAIN (Deemed-to-be University)

Master of Computer Applications — GPA: 3.4/4.0 (8.39/10)

Bengaluru, India

July 2024 – May 2026

Acharya Institutes (Affiliated with Bengaluru City University)

Bachelor of Computer Applications

Bengaluru, India

July 2019 – March 2023

EXPERIENCE

Software Engineer Intern

ULTS Global

July 2025 – Oct. 2025

UL Cyberpark, Kozhikode

- Decomposed a coupled monolith into domain-isolated NestJS microservices (auth, orders, inventory) on PostgreSQL, enabling independent deploys and reducing p99 API latency by **62%**.
- Architected Docker Compose containerization for 6 services with environment-specific config injection, cutting provisioning time from **4 hours to 8 minutes** and eliminating staging/production drift.
- Owned the Flutter client layer, designing an optimistic-update API abstraction over REST that improved perceived responsiveness and lifted session retention by **23%**.

Flutter Developer Intern

ERE Business Solutions

July 2025 – Sept. 2025

Sahya Cyberpark, Kozhikode

- Profiled rendering bottlenecks via Flutter DevTools, isolating widget rebuild storms; restructured widget trees with `const` constructors and `RepaintBoundary`, stabilizing frame rate from **42 to 60 FPS**.
- Designed a three-tier cache (in-memory LRU, Hive persistent, network) to prevent redundant fetches, cutting external API calls by **48%** and screen load time from **1.4s to 0.7s**.
- Traced memory retention across route transitions, fixing unreleased stream subscriptions and cache overflows; enforced scoped disposal, dropping memory baseline from **210 MB to 128 MB**.

PROJECTS

CodeAutopsy — AI-Powered Code Analysis Platform | *Tree-sitter, WebSockets, FastAPI*

[Github](#)

- Designed a Tree-sitter AST engine with 200+ rules and distributed BFS taint tracking, replacing Semgrep to gain rule-level control and achieving **87% precision** with only **8% false positives**.
- Architected SimHash content-addressable caching with git-diff scoping so unchanged AST subtrees skip re-analysis, collapsing scan time from **120s to 3s** at a **78% cache hit rate**.
- Built WebSocket + Yjs CRDT collaborative review for **500 concurrent users at <50ms latency**; exported fine-tuned CodeBERT to ONNX for **10× faster** runtime inference.

SmartKisan — Agricultural AI Diagnosis Platform | *ReactJS, Gemini API, Python*

[Website](#)

- Architected a serverless Gemini API inference pipeline with agriculturally conditioned prompts, eliminating GPU costs entirely and classifying plant diseases in **under 2s end-to-end**.
- Built adaptive Python pre-processing (compression + normalization) to standardize camera-variant inputs, reducing payload size by **65%** and monthly bandwidth cost by **\$120**.
- Engineered a structured ReactJS output layer decoupling inference from presentation, enabling new crop types without UI changes and driving a **3.2× uplift** in recommendation uptake.

Future Summit — Live Event Coordination App for futuresummit.in | *Flutter, Firebase*

[Playstore](#)

- Designed Firebase Realtime Database node structure to broadcast schedule and map updates to **200+ concurrent clients in under 300ms** without fan-out bottlenecks.
- Owned full delivery from architecture to Play Store in **under 3 weeks**, prioritizing sync reliability over scope and achieving zero downtime during the live event.
- Architected offline-first state with deterministic local cache fallback, keeping core flows functional during network drops and reducing session abandonment by **31%**.

TECHNICAL SKILLS

Languages: Python, JavaScript/TypeScript, Java, C/C++, SQL, Dart

Frameworks & Libraries: FastAPI, Node.js, NestJS, ReactJS, Flutter, Tree-sitter, ONNX Runtime

Infrastructure & Tools: PostgreSQL, Redis, Docker, Firebase, Git, WebSockets, Figma

AI/ML: CodeBERT (fine-tuning), Gemini API, LLM integration, taint analysis, static analysis

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