

# Keerthivasan S V

Coimbatore, India · +91 9488627508 · [keerthivasansv2006@outlook.com](mailto:keerthivasansv2006@outlook.com)  
[LinkedIn](#) · [GitHub](#) · [Portfolio](#)

## Education

### B.Tech – Computer Science & Engineering (Artificial Intelligence)

Aug 2023 – Mar 2027

Amrita School of AI, Amrita Vishwa Vidyapeetham, Coimbatore · **CGPA: 8.11 / 10**

*Relevant Coursework:* Data Structures & Algorithms, Probability & Statistics, Linear Algebra, ML Fundamentals, System Design, Computer Networks, Big Data Analytics, Computer Vision & Image Processing

### High School Diploma (CBSE)

2023

Jawahar Higher Secondary School, Neyveli · HSC: 84.8% · SSLC: 89.6%

## Technical Skills

**Languages:** C++, Python, C, JavaScript / TypeScript, Solidity

**Quant & Systems:** Low-latency design, Lock-free data structures, FIX protocol, Statistical arbitrage, Order book implementation, Backtesting pipelines

**AI / ML:** PyTorch, TensorFlow, DistilBERT, spaCy, OpenCV, ONNX, pgvector, YOLOv11, MediaPipe, Whisper, Gemini Flash

**Web3 & Blockchain:** Ethereum, Optimism L2, Shardeum, Fully Homomorphic Encryption (Inco Network), Hardhat, Ethers.js, Smart Contracts

**Infra & Frameworks:** Docker, Kubernetes, PostgreSQL, Redis, Supabase, Prometheus / Grafana, FastAPI, React / Next.js, Flutter, AWS Bedrock, MCP, E2B Sandboxes

## Experience

### Smartly Ventures — Founding Builders Cohort Member

Mar 2026 – Present

Haryana, India · Remote · [labs.smartly.ventures](https://labs.smartly.ventures)

- Building as an early team member in an applied AI venture studio focused on agent infrastructure and real-world deployments in emerging markets.
- Contributing to core build phase: developing business automation systems using WhatsApp for MSMEs (salons, clinics) with focus on lead generation, booking, retention, and promotion workflows.
- Dogfooding internal GTM systems (CSR outreach, partnership/BD automation, college outreach) to validate agent infrastructure before external deployment.
- Part of founding cohort building toward \$6M SAFE round with plans to extend to \$10.5M seed round.

### Protocol Labs — Dev Guild Cohort 6 Contributor

Jan 2026 – Mar 2026

Remote

- Contributed to libp2p/unified-testing — unified interoperability and scaling testing framework for libp2p implementations across Go, Rust, JS, and Python.
- Implemented comprehensive Echo protocol interoperability tests for js-libp2p, enabling validation of bidirectional stream behavior, payload integrity, and cross-implementation compatibility.
- Built Docker-based test orchestration, HTML dashboard generation, and test matrix automation for 49+ test combinations across TCP, WebSocket, QUIC transports with Noise/TLS security layers.
- Resolved critical bugs in js-libp2p v3.x Docker builds, dependency conflicts, environment variable compatibility across implementations, and test framework result duplication issues.
- Successfully integrated misc protocol test suite into CI/CD pipeline following libp2p test-plans framework patterns.

### Navicon Infraprojects Pvt. Ltd. — Product Manager Intern

Nov 2025 – Present

Uttar Pradesh, India · Remote

- Collaborated with Director on strategy and delivery for 9-module ERP platform; worked with 6-member development team on roadmap planning, sprint execution, and release coordination.
- Supported product lifecycle from requirements gathering to deployment, maintaining **P95 latency < 1.4s** and **99.5%+ uptime** for 10+ active users in test deployment on Android and iOS.
- Defined and tracked KPIs (adoption, uptime, feature usage, CSAT) and contributed to data-driven product improvements.

### Navicon Infraprojects Pvt. Ltd. — App Developer Intern

Jun 2025 – Oct 2025

Uttar Pradesh, India · Remote

- Built production-ready Flutter ERP app with role-based authentication and real-time Supabase data sync.
- Developed AI Master Data Agent (FastAPI + DistilBERT + spaCy) supporting 35 intents, 15+ entities, achieving **90%+ accuracy**.
- Implemented multilingual OCR and invoice parsing components, reaching **85%+ F1-score**.

- Deployed Dockerized microservices with PostgreSQL, Redis, Alembic, and JWT-based RBAC across 100+ endpoints with Prometheus/Grafana observability and ML drift monitoring.

## Key Projects

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### Low-Latency Trading Engine in C++ · [Benchmarks](#)

- Built complete FIX feed handler and limit order book from scratch in C++; measured **sub-10  $\mu$ s processing latency** per message on benchmarked hardware with reproducible methodology documented in repo.
- Implemented Bellman-Ford graph search for **triangular currency arbitrage** integrated with live exchange WebSocket feeds.
- Order book uses Red-Black Tree price levels with  $O(1)$  cancel and  $O(\log N)$  insert; Python backtesting layer uses Segment Trees for efficient range queries on historical tick data.
- React/TypeScript dashboard exposes **P50 / P95 / P99 latency histograms** in real time.

### GramPulse — Blockchain Grievance Platform · [GitHub](#) *Hack Web3Conf 2025 · 1st Prize (\$1K USD) · 120+ hackers*

- Won 1st Prize in AI  $\times$  Web3 Track at Hack Web3Conf 2025 (ITC Dwarka, Delhi) organized by GirlScript Foundation and Web3Conf India on DoraHacks.
- Voice-first Village Sustainability Index Tracker enabling rural citizens to raise grievances with SLA-based resolutions and live sustainability pulse measurement.
- Deployed on **Optimism L2** and **Shardeum** with on-chain SLA contracts that auto-penalise officers for delayed resolution; citizen identity protected by **Fully Homomorphic Encryption (Inco Network)**, ensuring zero data leaks even to administrators.
- Implemented DAO-based DeGov model for funding and governance; AI module for pattern detection and civic insights.

### AI Voice Agent Platform · [GitHub](#) *SpinSci AI Hackathon 2025 · Grand Prize (Rs. 100K) · 20 teams*

- Won Grand Prize at SpinSci Hackathon 2025 (T-Hub Hyderabad) among 20 shortlisted national teams; built MVP in 6.5 hours after pivoting from computer vision project to call automation when brief changed on the day.
- **Production-deployed** multi-tenant enterprise call automation platform achieving **< 1s median response** via concurrent Deepgram STT  $\rightarrow$  LLM  $\rightarrow$  ElevenLabs TTS pipeline.
- Scaled architecture supports **1000+ concurrent calls**; HIPAA-compliant with zero-trust security and config-only multi-tenancy.
- Full-stack implementation with FastAPI backend, Twilio telephony integration, KEDA auto-scaling, and Prometheus/Grafana observability.
- Open-sourced complete platform with Docker and Kubernetes deployment manifests for healthcare and automotive integrations.

### Derived — Agentic Code Generation Platform · [Live Demo](#) *UI Strikes Back Hackathon*

- Natural language  $\rightarrow$  live React app in seconds using **Tambo AI agents** with MCP (Model Context Protocol) to read actual codebase before writing code, eliminating hallucinations.
- E2B sandboxed microVMs auto-install packages and hot-reload; agent renders real-time build status as interactive UI components in chat stream.
- Stack: Next.js 15, GPT-5, Gemini 2.5 Pro, Firecrawl for design cloning, Vite HMR-enabled dev server.

### Recall — Self-Learning MCP Data Agent · [GitHub](#)

- SQL-to-natural-language insight agent grounding every query in **6 retrieval layers** (schemas, business rules, validated patterns, live web, learned corrections, runtime schema) via pgvector + Google Gemini.
- **Self-corrects** by logging failures to vector DB — future identical errors are prevented automatically.
- OpenTelemetry traces, Prometheus metrics, Kubernetes deployment; ChatGPT-style React UI.

### Competitor Monitoring Automation · [GitHub](#) *WeMakeDevs Hackathon · Automation Track Winner*

- Selected as Automation Track Winner at “Automate Me If You Can” Hackathon by WeMakeDevs and Accomplish.
- Automates competitor monitoring by generating AI-powered intelligence reports in minutes using semantic diffing and strategic shift detection.

### Kavalan — Digital Arrest Scam Detection · [GitHub](#) *ML.Cbe GenAI Hackathon · 2nd Prize (2 awards)*

- Won 2nd Prize (2 awards) at GenAI Hackathon ML.Cbe 2025 organized by AI Tamil Nadu, Nunnari Labs, DeepWeaver.ai & Google for Developers.
- Browser-based GenAI PoC detecting Digital Arrest scams live during video calls using visual cues, human behavior, and scam language.
- No call interception, no data storage — real-time warnings via Gemini Flash for visual reasoning, MediaPipe for

liveness and behavior signals, ResNet-based vision pipeline in Streamlit + WebRTC.

### IoT-Based Computer Vision System for Pipe Inventory Management · [IEEE](#) (Under Review) · [Patent Approved](#)

- Developed real-time, edge-deployable pipe counting and classification system using **YOLOv11** and classical CV, optimized for Raspberry Pi 4.
- Achieved **98.7% accuracy** for single pipes and **82%+** for 4-layer nests via hybrid detection, nested-pipe segmentation, and statistical filtering.
- Implemented automated diameter/thickness measurement and dual-database cross-verification pipeline for secure warehouse inventory management.
- Journal publication under review in *IEEE Transactions* (2025); patent approved.

### Chihnam — AI Communication Tool for Hearing-Impaired · [Demo](#) · *Thiran AI Innovate 2024* · Runner-up (Rs. 15K)

- Won Runner-up at AI Innovate Hackathon 2025 (Sri Eshwar College of Engineering) among 47 teams, shortlisted to final 15 for offline hackathon.
- Real-time bidirectional sign language ↔ speech system using MediaPipe hand landmarks, OpenCV preprocessing, and PyTorch FCNN achieving **94%+ gesture accuracy**.
- Whisper-powered speech-to-sign pipeline with ASL mapping and ONNX-optimized inference; deployed via Flutter frontend and Flask backend.

### Skin Cancer Detection Using AI · [GitHub](#) · [Docker](#)

- Developed CNN-based medical imaging tool achieving **92% accuracy** on 25,000 labeled images.
- Deployed scalable solution using Docker, reducing deployment time by 70%.

## Achievements & Recognition

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- **Hack Web3Conf 2025** — 1st Prize (\$1K USD, AI × Web3 Track) for GramPulse among 120+ hackers (GirlScript Foundation, Web3Conf India, DoraHacks)
- **SpinSci AI Hackathon 2025** — Grand Prize (Rs. 100K) among 20 shortlisted national teams for AI voice automation platform (T-Hub Hyderabad)
- **WeMakeDevs Hackathon** — Automation Track Winner for competitor monitoring automation (Accomplish)
- **ML.Cbe GenAI Hackathon 2025** — 2nd Prize (2 awards) for Kavalan digital arrest scam detection (AI Tamil Nadu, Nunnari Labs, Google for Developers)
- **Thiran AI Innovate 2024** — Runner-up (Rs. 15K) for Chihnam accessibility tool among 47 teams
- **ICSRF SocioHack 2025** — Final 4 for GramPulse (evolved into Web3Conf winning version)
- **ThingQbator Cohort 7 & 8** — 3 ideas selected in Top 125 nationwide for innovative health tech, accessibility, and public safety solutions
- **Microsoft Certified: Azure AI Engineer Associate** (Renewed Nov 2025)
- **Google Certifications:** Cybersecurity Specialization, Cloud Security Skill Badges (SCC, BCE, IAM), BigQuery & Looker Data Engineering, Generative AI & Vertex AI, Network Security

## Publications & Research

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- **IoT-Based Computer Vision System with ML for Pipe Inventory Management** — *IEEE Transactions* (Under Review, 2025). Patent approved.
- **Review on Role of AI/ML in Pyrolysis of Biomass, Tyre, and Plastic with Perspective of PINNs and Autonomous Pyrolysis Systems** — Comprehensive review covering predictive modeling, physics-informed neural networks, and AI-driven self-optimizing pyrolysis frameworks based on recent advances in autonomous systems.
- Supervised by Dr. Akhil Mohan on integrating AI/ML in biochar and pyrolysis research; contributed to computational modeling and data analysis workflows.

## Leadership & Extracurricular

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**Core Team Member** — ACM Amrita

*Mar 2025 – Present*

**Technical Team Member** — IETE Amrita

*Nov 2024 – Present*

**Web Dev Team Lead** — Tensor Club

*Jun 2025 – Nov 2025*

**Frontend Developer** — Anokha '26 (Tech Fest)

*2026*

**Frontend Developer** — Pragati '25 (B-Fest)

*2025*

- Led development of **Tensor Club website**, directing 10-member engineering team and shipping production Next.js application ([Link](#)).

- Co-led development of **IETE Website**, directing 6-member team on frontend architecture, component systems, and performance optimizations ([Link](#)).
- Contributed to **Anokha '26** engineering team, developing scalable frontend features, interactive UI components, and performance-optimized layouts using Next.js, Tailwind CSS, and GSAP animations ([Link](#)).
- Built UI components, GSAP animations, and reusable layouts for **Pragati '25** using Next.js, Tailwind CSS, ShadCN ([Link](#)).
- Conducted knowledge-sharing session “How to do Hacks?” at ACM Amrita, fostering peer learning and creative problem-solving.