

# PRASAD SANKAR

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## EDUCATION

B.Tech, CSE, IIT Sri City

Aug 2021-Jun 2025, **8.79 CGPA**

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## SKILLS

**AI & Infra** vLLM, TensorRT, LangChain, Kubernetes, AWS, Torch  
**Web3** Zero-Knowledge Proofs, Post-Quantum Cryptography, EVM, Solana, Arweave

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## EXPERIENCE

**Founding Engineer - Stealth Startup**

August 2024-Present

- Architected a **low-latency ReAct Framework**. Fine-tuned and quantized SLMs with QLoRA, **cutting memory by 45% and halving TTFT**. Deployed them using llama.cpp, added agentic RAG capabilities, achieving **sub-100ms retrieval** with sqlite-vec. Further **reduced LLM TTFT by 65%+** using prompt caching. **Boosted tool-selection speed by 99%** with weighted-embedding+keyword selection while **maintaining 90+% selection precision**.
- Implemented a **Post-Quantum P2P Data Transfer Protocol** using **Kyber-768 (KEM)** and **Dilithium-65** (Digital Signatures). Implemented a hybrid **X25519 + Kyber** key exchange flow, securing sensitive medical data against future quantum decryption threats.
- Architected a **serverless medical data layer**. Designed a **crypto-shredding mechanism using Lit Protocol (MPC)** to enforce time-bound access, & integrated **Walrus (Sui) for encrypted blob storage**.
- Designed a **zkTLS-based trust anchor** to verify licenses, by building **Noir (ZK-DSL) circuits on Aztec** to mint privacy-preserving credentials, reducing verification time from days to < 30 seconds without revealing PII using **”selective-disclosure” merkle trees**.
- Built a **real-time STT pipeline** using whisper.cpp, supporting token-level scores and real-time speaker diarization.

**Co-founder - PermaSign**

April-September 2025

- **Scaled to 5 paying B2B clients**. Immutable, trustless and permanent e-signatures on the blockchain for startups.
- **Architected a decentralized backend & storage** using Arweave and AO. Ensured **enterprise-grade encryption and account abstraction** using **post-quantum cryptography and AWS KMS**.

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## KEY PROJECTS

**Retrace (ETHIndia 2024 Winner - 4 Tracks):**

*Solidity, Hardhat, Base*

Enabled **reversible transactions** by building a DeFi platform with a wrapped ERC-20 token (”Reversible Ether”) governed by an **AI + human DAO** that allows users to undo mistaken transfers within a time-lock window.

**Opaque:**

*FHE (CKKS), Go, Lattigo, LSH*

Engineered a **privacy-preserving vector search system** using **homomorphic encryption (CKKS)** and a novel three-level cryptographic architecture, achieving **12x latency reduction** through **SIMD batch HE optimization** (2s → 172ms) while maintaining **95% recall** on 100K vectors with **zero query/data leakage** to servers or database.

**FastInfer - Hybrid Compute Engine:**

*vLLM, Redis, Terraform*

Architected a scalable async inference API. Leveraged **vLLM and Redis** to decouple serving logic and orchestrated a hybrid compute environment (**ECS Control Plane + EC2 GPU Workers**) using **Terraform**.

**DarkFlow - MEV-Resistant Dark Pool:**

*Solana, Rust, Noir ZK*

Built a privacy-first DEX on Solana using **Zero-Knowledge Proofs**. Enabled shielded order matching where price and size remain hidden until execution, **eliminating MEV** and front-running risks.

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## ACHIEVEMENTS & CERTIFICATIONS

- Published 2 research papers in ML - in the domains of **image processing** and **bioinformatics**
- Ranked 76th out of 1300 teams in **ICPC Regionals 2022**.
- **Amazon ML Summer School 2023 Scholar:** Selected among the top 3000 students nationally.
- ML, DL, NLP specializations from Stanford and DeepLearning.AI.