

# Siddhant Kaushik

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## EDUCATION

### SRMIST

Bachelor of Technology in Computer Science with specialization in IoT (CGPA: 9.02/10)

Katthankulathur, Tamil Nadu

Jul. 2024 – May 2028

## EXPERIENCE

### Dev Fellow, Bitshala

June 2026 – Present

Formstr-org

Remote

- Contributing to Formstr-drive and Formstr docs to build privacy-preserving, decentralized file storage alternatives to traditional cloud platforms using Nostr and Blossom infrastructure.

### Developer Intern

May 2026 – July 2026

SARAL AI

Hyderabad

- Architected automated model evaluation pipelines using LangSmith to benchmark, log, and monitor token latency, correctness, and performance across Gemini and Sarvam AI models.
- Engineered context-aware LLM agent orchestration logic and shipped a production-ready TTS pipeline utilizing asynchronous multi-thread FFmpeg audio stitching.

### GSoC Contributor, Aossie-Org

May 2026 – Present

Google Summer of Code

Remote

- Engineering the core architecture of a decentralized blockchain protocol, integrating PoW consensus, libp2p secure P2P networking, and optimized mempool mechanics for scalable state persistence.
- Implementing cryptographic transaction signing utilizing PyNaCl and developing secure execution environments for smart contracts with comprehensive transaction validation.

### Research Intern

Jan 2026 – June 2026

UROP (SRMIST)

Chennai, TN

- Designed AI-driven adaptive digital twin models using deep neural networks and state-space simulations to evaluate and structurally optimize routing bottlenecks in large-scale network topologies.

## ACHIEVEMENTS

- SIH Finalist:** Selected among the top 250 teams out of 800+ entries globally in the internal selection round.
- Bounty Winner, ETHSF 2025:** Collaborated in a team of 4 to deliver an on-chain cryptographic verification project within 48 hours and secured 0.0063 ETH bounty.

## PROJECTS

### Modern Small Language Model (SLM) from Scratch | *PyTorch, Python*



- Built a modular SLM architecture from the ground up implementing Grouped Query Attention (GQA), SwiGLU activation functions, Rotary Positional Embeddings (RoPE), and RMSNorm layers.
- Engineered custom variants, including a compact 4M parameter token generator and a Qwen2.5-micro replication to study compute-efficient model convergence constraints.

### Transformers Implementation ("Attention Is All You Need") | *PyTorch, NumPy*



- Developed the complete vanilla Transformer architecture from raw mathematical specifications without reliance on high-level transformer packages, building custom scaled dot-product attention units.
- Programmed specialized token embedding steps, static positional encodings, and optimization loops to analyze encoder-decoder layer mechanics during training sequences.

### ECO-SENTRY: Early Wildfire Predictor | *Python, ML, GEE, CNN*



- Engineered an early wildfire prediction system for Indian forests by analyzing satellite signals and generating Convolutional Neural Network (CNN) heatmaps.
- Achieved 98% accuracy in early detection (within 15 minutes) by processing real-world MODIS thermal anomaly datasets spanning from 2015 to 2023.

## TECHNICAL SKILLS

**Languages:** Python, C, C++, Solidity, HTML/CSS

**AIML & Data Science:** PyTorch, Scikit-learn, NumPy, Pandas, SciPy, LangSmith, LLM Evals

**Web3 & Blockchain:** Solidity, Web3.py, Smart Contracts, EVM, P2P Networking, libp2p

**Backend & Frameworks:** FastAPI, Flask, Celery, Redis

**Tools:** Git, Docker, Ubuntu, MongoDB, Firebase, GCP, Postman, Jupyter

## RELEVANT COURSEWORK

Data Structures & Algorithms, Linear Algebra, Probability & Statistics, Machine Learning (self-study)