Apurva Mishra

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Computer Science student building ML systems at the compiler-model boundary, with experience in Rust compiler internals, Wasm sandboxing, and JAX workflows.

Work Experience

IIT Hyderabad Dec 2025 – Jun 2026
Full Semester Intern 6 months
- Build and iterate on a vulnerability-detection training/evaluation pipeline for code-security tasks
- Improve experimental reliability by addressing evaluation failure modes and class imbalance via stricter evaluation and synthetic-data balancing

Google Summer of Code: The Rust Foundation ↗ May 2024 – Oct 2024
- Mentored by David Lattimore ↗ 6 months
- Added experimental support in rustc for building and running WebAssembly-based procedural macros
- Integrated Wasmtime runtime via shared object loading and resolved low-level rustc integration constraints
- Implemented compiler-to-Wasm communication bridge using token-stream serialization

IIT Jammu Dec 2023 – Jan 2024
Project Intern 1.5 months
- Built PDF similarity, web crawler, and search parser prototypes for indexing and retrieval quality

Cyber Physical System Intern July 2023
- Built a Go + TimescaleDB client-server pipeline for ingesting and querying high-volume IoT telemetry

Education

B.Tech in Computer Science and Engineering - 9.19/10 CGPA 2022 – Present
Vellore Institute of Technology, Vellore, India

10+2, CBSE Board - 92.6 % July 2022
Jayshree Periwal Global School, Jaipur, India

TOEFL iBT - 115/120 October 2025

Projects

nanoBabble ↗ Ongoing Work
Minimal JAX/NNX trainer scaffold with config-driven runs, synthetic-data generation, Orbax checkpointing, and modular attention backends.

Jax-Models ↗ Fall 2025
Hand-written JAX model implementations (ViT, TinyStories LM, chess experiments) built while learning deep learning, with reproducible workflows.

Typ-Browser ↗ Winter 2024
Typst-first browser prototype with a Rust backend and native macOS SwiftUI client.

Publications & Writing

Tenstorrent - Favourite Hardware Company ↗
- Technical essay on open hardware-software co-design, featured by Tenstorrent.

Skills

Programming Languages: Rust, Python, C, Go, Swift
ML Systems: JAX/NNX, Fine-tuning (LoRA/Full FT), LLM Evaluation, Synthetic Data Pipelines
Compiler & Systems: rustc internals, WebAssembly/WASI, Wasmtime, MLIR, Serialization/RPC
Data & Tooling: SQL, TimescaleDB, Git