

Akshit Kumar Tiwari

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GitHub: github.com/rinturifle LeetCode: leetcode.com/rinturifle Codeforces: codeforces.com/profile/rinturifle

Education

Sri Sivasubramaniya Nadar College of Engineering, Chennai

B.E. in Computer Science and Engineering (2023 - 2027)

- **CGPA:** 7.93/10

Holy Mission Secondary School

- 12th Grade: 96%

DAV Public School BSEB Colony

- 10th Grade: 92.6%

Experience

Cybernaut

May 2026 – July 2026

Software Engineering Intern (Full-Stack E-Learning Platform)

Remote

- Architected and developed a highly scalable educational platform using **Next.js**, **Node.js**, and **MongoDB**, ensuring a seamless interactive user experience.
- Implemented a robust secure password reset workflow leveraging time-limited cryptographic tokens and rigorous server-side validation to eliminate vulnerabilities.
- Designed a persistent **Admin Control System** with complex client-state management, handling role-based access logic for premium user upgrades securely.

Projects

Alpha Engine – Quantitative Research Platform

2026

Exposure: Python, Pandas, NumPy, Joblib, Streamlit, Parquet

- Built an event-driven quantitative research and backtesting platform supporting multi-strategy portfolio simulation, transaction-cost modeling, and institutional-grade performance analytics.
- Implemented walk-forward validation, market regime detection, Monte Carlo stress testing, and dynamic risk controls (ATR stops, circuit breakers) to evaluate robustness and reduce overfitting.
- Scaled large-scale historical simulations using NumPy vectorization, Joblib parallelism, and Parquet-based storage, processing millions of OHLCV records while reducing backtest runtime by 10× versus the initial sequential implementation.

Foedus – Multi-Agent AI Pipeline

2026

Exposure: Python, LangGraph, Gemini 1.5, Celery, Pydantic

- Built an asynchronous six-agent AI pipeline (Preprocessor, Matchmaker, Auditor, Risk Assessor, Writer, Reviewer) using **LangGraph** and Gemini 1.5 to automate complex tender evaluations for MSMEs.
- Ensured highly structured, predictable LLM outputs using **Pydantic** schemas, minimizing parsing errors in downstream evaluation logic.
- Integrated **Celery** and Redis for distributed background task processing to reliably handle complex, long-running agent contexts at scale.

Thermal Human Action Recognition – Computer Vision Pipeline

2026

Exposure: Python, OpenCV, PyTorch, Scikit-learn

- Engineered a Two-Stream Convolutional Neural Network in **PyTorch**, leveraging dense optical flow (Farneback) and Motion History Images (OF-MHI) via OpenCV to classify actions under zero-visibility conditions.
- Optimized the data ingestion pipeline by caching precomputed multi-frame spatiotemporal representations as NumPy arrays, accelerating model training and cross-validation cycles.

Contributions and Achievements

- 2nd Runner-up & Best UI/UX Award at **SRM KTR HackSummit 6.0**.
- Qualified for **Smart India Hackathon (SIH) 2025–26 Internal**.
- Active competitive programmer with Codeforces Rating **1371** and CodeChef **1352**. Solved **500+** algorithmic problems across platforms (LeetCode & others).
- Qualified Pre-Regional Mathematics Olympiad 2019.

Technologies

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

Frameworks & AI: React, Next.js, Streamlit, Spring Boot, PyTorch, Scikit-learn, LangGraph, Gemini API

Tools & Data: Node.js, Celery, Pandas, Parquet, PostgreSQL, MongoDB, Git, Docker, Linux

Coursework: Data Structures & Algorithms, OOP, Operating Systems, DBMS, Computer Networks, Discrete Math