Tridipta Mishra

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Education

Indian Institute of Technology Roorkee — Roorkee, India
Bachelor of Technology in Electrical Engineering (CGPA: 8.25/10) — *Aug 2023 – Present*

Experience

D.E. Shaw & Co. | Technology Developer Intern — May 2026 – July 2026
Evolving Code Watch for Automated GitHub Issue Resolution — *Hyderabad, India*

- Architected a surface-agnostic DAG task engine with persistent state caching and topological execution, resolving dependency graphs to eliminate redundant LLM API calls across GitHub and CLI interfaces.
- Engineered an autonomous GitHub issue resolution pipeline in Code Watch, driving multi-file codebase analysis, dynamic root-cause localization, automated patch synthesis, and end-to-end pull-request generation.
- Orchestrated agentic RCA and fix workflows using Claude Agent SDK, integrating confidence-based human-in-the-loop validation, repository-specific convention enforcement, and multi-repository support.
- Implemented an isolated sandbox validation harness with iterative test feedback loops, achieving 96% positive RCA evaluations, 70% fully correct fixes, and 92% fixes requiring only minor convention edits.

Projects

Dijkstra Travel Planner — Nov 2024 – Feb 2025

- Developed a high-performance C++ travel planner computing optimal routes on weighted graphs via Dijkstra's algorithm.
- Built an interactive CLI supporting real-time traffic load, fastest, cheapest, and direct connection queries.
- Structured generated traversal output reports and route summaries, enhancing decision-making and route clarity.

Credit Card Score Modelling Via Classification & Risk Techniques — May 2025 – June 2025

- Developed a machine learning classification model to predict customer credit card defaults using financial records.
- Performed extensive feature engineering and applied SMOTE for effective class imbalance handling.
- Achieved significant predictive performance boost while preserving model interpretability via feature importance analysis.

Multithreaded Matrix Multiplication using Strassen's Algorithm — Feb 2025 – March 2025

- Designed an optimized matrix multiplication engine utilizing Strassen's recursive divide-and-conquer strategy.
- Applied recursive decomposition techniques to reduce time complexity and accelerate computational performance.
- Parallelized recursive quadrant calls using multithreading to improve runtime on large-scale matrix workloads.

1st and 2nd-Degree Hangout Planning App — June 2025 – July 2025

- Designed and developed a responsive mobile app enabling users to coordinate hangouts across 1st and 2nd-degree social connections.
- Implemented interactive social graph navigation, hangout discovery feeds, approval workflows, and OTP authentication.
- Engineered modular state management and custom reusable UI components to ensure smooth, responsive user interactions.

Technical Skills

Languages: C++, Python, Java, SQL, Dart
Developer Tools: Git, GitHub, CLI Tools
Core Competencies: Data Structures and Algorithms, Object-Oriented Programming (OOP), Machine Learning

Achievements & Leadership

Competitive Programming — Jan 2024 – Present
Online Judges (Codeforces, CodeChef)

- Solved **1,600+ algorithmic problems** across Codeforces and CodeChef, demonstrating deep mastery of DS & Algorithms.
- **Codeforces**: **Expert** (Max Rating: **1805**, Handle: tridipta2806) | Global Rank **141** (Round 1027), **339** (Round 1006), **579** (Round 1000).
- **CodeChef**: **5-Star** (Max Rating: **2079**, Handle: tridipta_19) | Global Rank **12** (Starters 166), **17** (Starters 168).

Programming and Algorithm Group (SDS PAG), IIT Roorkee — May 2025 – Present
Coordinator — *Roorkee, India*

- Spearheaded campus competitive programming initiatives, delivering DSA lecture series and mentoring teams for ICPC.
- Authored, curated, and stress-tested original algorithmic contest problems for Insomnia, ICC (Cognizance), and Algorhythm.
- Managed campus-wide contest operations and execution for Open Contest Series (OCS), engaging hundreds of students.