Shlok Jain

Second-Year Undergraduate
Department of CSIS, Department of Economics

jainshlok20@gmail.com | +91-7045866240
GitHub | LinkedIn | Codeforces | AtCoder

Academic Qualifications

Year	Degree/Certificate	Institute/Administrator	GPA/%
2024 - Present	B.E. CS + M.Sc. Economics	Birla Institute of Technology & Science, Pilani	8.81/10
2024	JEE Main	National Testing Agency	99.22%ile
2024	JEE Advanced	Indian Institute of Technology	AIR 10803/180k
2024	State Board(XII)	Dixit Road High School, Mumbai	89%
2022	IGCSE(X)	DG Khetan International School, Mumbai	92.8%

Key Projects & Experiences

- **Kaze** (*May'21 – Jun'21*)
  - Developed a productivity-focused Android launcher using **Flutter** and **SQLite** for on-device persistence and **Firebase** for analytics.
  - Designed the end-to-end product including user flows, screens, wireframes, and design systems for multiple unique devices on **Figma**
  - Achieved **2K+ beta downloads** through organic user adoption, maintaining a strong **4.2/5.0** average rating.
  - Placed **2nd** in India's Future Tycoons and received a **seed fund of 50K rupees**
- **Open-Source Contributor @ HPX (Parallel C++ Runtime)** (*Jul'25 – Present*)
  - Actively contributing to HPX, **owning the Sender/Receiver infrastructure** which abstracts async task execution cleanly
  - Merged PR #6734, resolving incorrect and redundant `resolver_client` aliases in `agas/agas_fwd.hpp`.
  - Merged PR #6899 in HPX **implementing** `forwarding_sender_query` across core sender adaptors, establishing correct query propagation through composed sender chains
  - Merged PR #6911 fixing a fast-path scheduling bug in HPX split (shared async result primitive), ensuring cached async results run on the correct execution context, preventing thread contract violations.
- **Pollu** (*Dec'25 – Jan'26*)
  - Built a **30 m spatial resolution** public API to **predict hourly AQI** by designing an ML model using ground sensors and satellite data, achieving **error of 14 units** and an **R^2 (coefficient of determination) of 0.7**, solo in one month
  - Engineered scalable ETL pipelines **processing 30 GB of raw data**, automating ingestion, cleaning, and feature assembly for downstream machine learning workflows
  - Implemented a **high-throughput LightGBM inference engine** and durable persistence via queued writes, connection pooling and fault tolerant workers with automatic restart and idempotent guaranties to ensure reliable end to end processing
  - Architected a **distributed Go backend** implementing **request deduplication** through leader-follower, multi-tier **caching** (Redis hot cache + DuckDB cold cache) which had a **hit rate of 99.8%**. Improved p95 latency from 900ms to 200ms
  - Designed and implemented a minimal, responsive user interface using **JavaScript and CSS**, allowing users to drop pins anywhere on the map to retrieve real-time AQI values, with clear hazard categorization and intuitive visual cues
- **Email Tracker Extension** (*Feb '26 weekend*)
  - Built a **self-hosted gmail tracking system** (Chrome extension + **Node.js/Express API** using Typescript + **SQLite**) to address inaccurate open analytics caused by gmail image proxying and repeated pixel fetches.
  - **Problem:** gmail proxies all images through Google servers, making **sender and recipient opens indistinguishable** at the **network level** since every pixel request appears to originate from Google infrastructure which makes counting multiple unique opens hard.
  - **Solution (unique): tokenized each tracking pixel** with sender identity and added an identity-based **suppression step**, where the extension detects self-opens and marks them via a pre-pixel POST so they are **excluded from unique-open counts**.
  - Implemented **time-window deduplication** to filter **proxy re-fetches** and **rapid reloads**, ensuring unique-open metrics.
  - Designed and developed a **dashboard to track emails**, open events, and analytics with structured **event logging and observability**

Technical Skills & Relevant Courses

Programming Languages	C++ — Go — Python — JS — TypeScript — Dart — SQL
Frameworks/Libraries	React — FastAPI — Flutter — HPX — node.js — ExpressJS
Build Systems/Tooling	CMake — Git — npm
Relevant Courses	Multivariable Calculus (A) — Linear Algebra & Complex Systems (A) — Computer Programming (A) — Fundamentals of Finance & Accounting (A) — Derivatives & Risk Management (*)

Positions of Responsibility

- **Competitive Programmer, Coding Club** (*Feb'25 - Present*)
  - Rated **1554** (peak) on Codeforces, with the best **rank of 994** out of 30K participants in Round 1033 (Div. 2)
  - Rated **1104** (peak) on AtCoder, with the best **rank of 695** out of 8k participants in the AtCoder Beginner Contest 423
  - **Ranked 2725** out of 14k participants in **Meta Hacker Cup's Round 1** and qualified for Round 2
- **Teaching Assistant, Computer Programming** (*Jan'26 - Present*)
  - Conducting of laboratory sessions, mentoring students, and clarifying core concepts during hands-on coursework.
  - Responsible for setting and evaluating examinations and assessments for a cohort of **600+ students**.

Extra-Curricular Activities

- District-level Handball player in Mumbai circuits
- Participated in district-level speech giving competitions
- Qualified IOQM, first stage of Indian mathematics olympiad (equivalent to AMC 12)