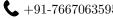
# AAYUSH AGARWAL

Software Engineer | 3+ Years in Backend & Distributed Systems

ontact.aayush.agarwal@gmail.com | \ +91-7667063595 | \ https://aayushagarwal02.github.io | in \







#### **EDUCATION & SCHOLASTIC ACHIEVEMENTS**

College	Degree	Year	JEE Adv. 2018 AIR	KVPY SA 2017 AIR
IIT Delhi	B.Tech in Computer Science & Engineering	2022	60	176

#### WORK EXPERIENCE

## • SDE, Market Risk Applications, Goldman Sachs

July 2022 - Present

- Joblite Scalable Remote Task Distribution Framework
  - \* Built library to manage pipeline-stage task execution on P3(internal scheduling service) running workloads on 25k cores
  - \* Helped meet 7hr SLO and reduce cloud usage by 30% via async task scheduling and per-task resource configuration
  - \* Collaborated cross-team on internal P3 service by adding DAG-based execution to its API layer for task chaining logic
  - \* Scaled task throughput from  $25k/5min \rightarrow 50k/5min$  by scaling Joblite process & batching DB persistence I/O
  - \* Built a dynamic batching solution with custom hooks to handle expensive input patterns & improve task success rate
  - \* Supporting analytics by publishing compute data to Snowflake and increased reliability via failure propagation of tasks
- Comet Event Driven Microservice & Orchestration Framework for Risk Pipeline
  - \* Helped build Kafka-based microservice system with central orchestrator to decouple DAG stages & handle 20M inputs
  - \* Designed orchestrator persistence model to track multi-granularity tasks and map upstream stage dependencies
  - \* Added stage-aware retries, dynamic downstream triggering in DAG workflows & backup-driven recovery for resilience
  - \* Integrated real-time monitoring by streaming orchestrator states to RV DRA server, cutting issue resolution time by 60%
- Soft Skills: Guided and mentored Junior Developers in the team and Summer Interns of 2023 & 24 in their project work
- Tech Skills: Distributed Systems, Database Design, Python, Kafka, Docker, REST APIs, gRPC, Pandas, Backend Dev

#### • ML Engineer Intern in Zevi.ai

Dec 2021 - Feb 2022

- Fine-tuned and deployed SBERT models on AWS to improve semantic search relevance across e-commerce catalog queries
- Enhanced autocomplete by integrating semantic context from SBERT embeddings, improving user query prediction by 25%
- Skills: Python, Jupyter, Docker, AWS EC2

### • Summer Intern, Capital Risk Applications, Goldman Sachs

May 2021 - Jul 2021

- Integrated a SQL-driven validation framework to streamline onboarding of new data quality rules for regulatory report
- Designed SQL templates for configurable & common pattern-based validation checks, minimizing manual coding effort
- Skills: Java, SpringBoot, SQL

#### KEY PROJECTS

• Collaborative Document Editor under Prof. Abhilash Jindal, IIT Delhi



Feb 2022

- Built & deployed real-time collaborative text editor supporting multi-user edit using WebSockets and synchronization
- Used CRDT-based **conflict resolution** ensuring consistent, synchronized document updates handling **race** conditions
- Designed scalable REST API & Websocket endpoints with periodic incremental persistence ensuring fault-tolerance
- Tech Stack: Java, SpringBoot, MongoDB, WebSockets

#### • Online Code Judge Platform (self project)



Feb 2025

- Built online coding platform with secure **JWT authentication**, real-time code execution, and automated verdicts
- Utilized **Docker** to create isolated sandbox environments for secure code execution within memory and time constraints
- Tech Stack: Docker, REST APIs

#### Mathematical Definition Classifier under Prof. M.Balakrishnan, IIT Delhi

Sep 2021

- Developed a classifier to understand the context of any mathematical formula as part of the RAVI project, IIT Delhi
- Used for **semantic disambiguation** of variables used in a mathematical formula for context understanding
- Can be used to make mathematical documents and PDFs in STEM accessible to visually impaired individuals

#### • Emoticon Detection Model under Prof. Parag Singla, IIT Delhi

Feb 2021

- Implemented CNN to recognize emotional state of images into 7 different categories in Kaggle competition
- Achieved accuracy of 70% in the deep learning model by adding dropouts to solve vanishing gradients problem

#### TECHNICAL SKILLS

- Languages: Java, Python, C++ | Frameworks: Flask, Django, SpringBoot | Libraries: NumPy, Pandas
- Databases & Warehouses: MySQL, PostgreSQL, Redis, MongoDB, DynamoDB, Snowflake
- Message Brokers: Kafka, SQS | APIs & Protocols: REST APIs, WebSockets, gRPC | Tools: Git, Postman, Jupyter
- Cloud & DevOps: Docker, Kubernetes, AWS EC2, CI/CD, Terraform, GitHub Actions