

RUDRAKSH AGARWAL

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PROFESSIONAL SUMMARY

Software Engineer with 3+ years of experience designing real-time backend systems, microservices, and data pipelines. Skilled in architectural decision-making to balance performance, scalability, and maintainability. Committed to delivering high-quality code and rapidly validating ideas.

SKILLS

FullStack & Agents: Python, FastAPI, LangGraph, PgVector, Typescript, React.js, Next.js

Cloud & DevOps: AWS (Lambda, ECR, SQS), Docker

Databases & Messaging: MSSQL, PostgreSQL, Redis, RabbitMQ, MQTT, Celery

Observability: Prometheus, AlertManager, Grafana, JMeter

Others: System Design, Asynchronous Programming, Distributed Systems

WORK EXPERIENCE

Senior Software Engineer

Oct 2020 – Jul 2024

Pune, India

- **Led a team of 4 engineers** to deliver Backend systems, owning architecture and release timelines.
- Built a **scalable real-time, event-driven loss detection system** ingesting multi-logger streams arriving **every 500ms**, improving monitoring efficiency and **reducing supervisory time by 50%**.
- Re-architected a **core ETL pipeline in Python** with Luigi framework **reducing pipeline duration by 6x**.
- Developed and launched an **automated email reporting service using Python and Node.js** driving a **10% increase in weekly engagement** with the core analytics platform.
- Owned the **end-to-end development of 50+ RESTful APIs in Flask**, which **enabled the entire suite of Manufacturing Line Analytics features** and directly supported the company's main product offering.
- Implemented a **new monitoring stack using Prometheus & Grafana**, reducing Mean Time to Discovery (MTTD) of **outages from hours to 5 seconds**. This allowed the team to proactively **resolve 40% issues** before impacting the customer.
- Decoupled and dockerised **5 microservices**, laying the groundwork for a scalable Kubernetes deployment on AWS cloud, transitioning from Internet Information Services (IIS) and PM2.
- Onboarded a **cloud migration consultancy** with our detailed backend architecture, services, and **current AWS EC2 based deployment** to facilitate a successful **full AWS transition**.
- Managed software deployment across client systems using shell scripts and daemonized processes, **ensuring timely updates, minimal downtime, and consistent configurations**.

Global Remote Mentorship Intern

May 2020 – Sep 2020

Remote

- IBM
- Improved the technical question-answer system for the TechQA dataset, **improving technical support capabilities**.
 - **Finetuned BERT on a technical corpus** using 3 techniques: Masked Language Model, Next Sentence Prediction, and Sequential Question Generation.
 - Developed a **language model in PyTorch** by combining a **multilayered BERT-based span selection model** with an **Attention over Attention architecture-based model**, and trained the model on a GPU cluster.
 - Achieved a **state-of-the-art F1 score of 57.7** on the TechQA dev set, surpassing previous benchmarks.

PROJECTS

- **Dataset Curator:** Built a Dataset Curator where can clean raw dataset and talk to your dataset as well. Supports multi-step planning. Used **LangGraph, FastAPI, PostgreSQL, React.js, Next.js**. - [Link](#)
- **Face Recognition Pipeline:** Built a multi-stage face recognition pipeline using **AWS SQS, Lambda**.
- **Chat Application:** Built a Terminal-based TCP Chat Application using **Socket Programming in C++** - [Link](#)

EDUCATION

State University Of New York at Buffalo

New York, USA

Master of Science, Computer Science (Systems Track)

Aug 2024 – Dec 2025

Indian Institute Of Technology Delhi

New Delhi, India

Bachelor of Technology, Engineering Physics

Jul 2016 – Jul 2020