UJJWAL GUPTA

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Education

University of Massachusetts, Amherst | *Master of Science in Computer Science* Feb 2024 - Expected: Dec 2025

- **Relevant Courses**: Systems for Data Science, System Defence and Test (Penetration Testing), Data Science Fundamentals, Distributed & Operating Systems [Transcript]

Indian Institute of Technology, Roorkee | *Bachelor of Technology* Jul 2013 - May 2017

- **Relevant Courses**: Computer Programming, Data Structures & Algorithms, Linear Algebra, Mathematical Methods

Skills

Programming Languages	Java (Advanced), Python (Advanced), C++ (Intermediate), Javascript (Intermediate), R (basic)
Technical Skills	Data Structures and Algorithms, Distributed Systems Design, Microservice Architecture, Object Oriented Design, SOLID principles, Linux, MacOS, Windows
Databases/Caches	SQL, Apache Hive, ElasticSearch, Redis, Google BigQuery, Druid, Amazon RDS
Frameworks and Technologies	SpringBoot, Apache Airflow, Spark, Apache Kafka, GraphQL, gRPC, REST, Apache Flink, Prometheus, Grafana
CI/CD Tools	Git, Confluence, JIRA, Jenkins, Bitbucket
Cloud Technologies	Amazon Web Services (AWS), Google Cloud Platform (GCP), Kubernetes, Docker

Professional Experience

Walmart Labs | *Senior Software Engineer* Oct 2022 – Dec 2024

- Developed an A/B testing framework for assessing the performance of marketing campaigns serving **>100 million ads**, informing Walmart's ad-bidding algorithm. **Enhanced Return on Ad Spend** by **9%** post-production.
- **Redesigned** the backend architecture for Search Engine Marketing's ad-bidding tool. **Reduced latencies** by **25%** by migrating the legacy Ruby on Rails code to a microservice-based architecture, integrating caching, Elastic Search, and BigQuery.
- Developed an **Airflow data pipeline** to aggregate data from multiple sources and sync in BigQuery, powering a comprehensive Analytics dashboard for Search Engine Marketing.

***Technologies**: Java, Python, SpringBoot, Apache Airflow, Google Cloud, Spark, Apache Hive, BigQuery, GCS Buckets, Jenkins, Git*

Paytm | *Senior Software Engineer* Jul 2019 – Sep 2022

- Implemented a rate-limiting mechanism for settlements service using the **token-bucket** algorithm to meet rate-limited constraints set by bank channels. Leveraged cache to maintain and allocate tokens. **Reduced** transaction retry **failures** by **70%**.
- **Reduced** daily merchant settlement cycle **time** from **4 hours** to **1.5 hours** by developing a real-time consumer to store merchant state prior to processing. **Improved** settlement timeline for **>15 million** merchants.
- Led engineering delivery for the **NPCI** (National Payment Corporation of India) **qSPARC** project, integrating Paytm's payment network to the national metro (travel) payments network, handling traffic of **>30000 payments/min**.

***Technologies**: Java, Spring Boot, Amazon Web Services, Kafka, SQL, Amazon RDS, ElasticSearch, Prometheus, Grafana, Git*

GE Healthcare | *Software Engineer* Feb 2019 – Jun 2019

- Developed an extendable application called **Click Tracer** for recreating the operator action sequence for MRI (Magnetic Resonance Imaging), estimating a **30% reduction** in system crash complaints in production.

Virtusa | *Software Engineer* Jul 2017 – Jan 2019

- Built a visualization tool to group contextually related mobile-network infrastructure alerts (issues) to **reduce** the **Mean Time** to **Resolution** from **6 hours** to **2 hours**. Leveraged Kafka for streaming the data and Druid for real-time analytics.

Projects & Research Publications

- Built a spark streaming application using **SparkML** for prediction of critical temperatures of superconductors, optimizing streaming performance by experimenting with various batch sizes and machine learning models. [Link] Mar 2024 – May 2024
- Author of a technical newsletter focused on distributed systems and the latest technologies titled '**Distributed Systems 360**'. [Link] July 2023 - Present
- Co-authored a research paper titled "AP-TRL: Augmenting Real-Time Personalization with Transformer Reinforcement Learning" **presented** at the **7th IEEE CSITSS** conference in November 2023. [Link] Jun 2023 – Aug 2023
- Co-authored a research paper titled "GradClassify: Securing Federated Learning using Open Set Classification on Gradients", **presented** at the **IEEE ICCINS 2023** (Computational Intelligence, Networks, and Security) in December 2023. [Link] Apr 2023 - Jul 2023