

# Ujjwal Gupta (He/Him/His)

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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, Database Design & Implementation, Machine Learning [\[Transcript\]](#)

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, Python, C++, JavaScript, R, HTML, CSS
Technical Skills	Data Structures and Algorithms, Distributed Systems, Microservices Architecture, Object Oriented Design, SOLID principles, Linux, MacOS, Windows
Databases/Caches	SQL, NoSQL, Hive, ElasticSearch, Redis, Google BigQuery, Amazon RDS, ScyllaDB
Frameworks and Technologies	SpringBoot, Airflow, Spark, Kafka, GraphQL, gRPC, RESTful APIs, Flink, Prometheus, Grafana, NumPy, SparkML, TensorFlow, PyTorch
CI/CD Tools	Git, Jenkins, Slack, Bitbucket, Kubernetes, JIRA, Kubernetes, Docker
Cloud Technologies	AWS (EC2, S3, DynamoDB), Google Cloud Platform (Dataproc, BigQuery, Compute Engine)

## 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.
- Designed the backend architecture for Search Engine Marketing's ad-bidding tool. Improved latencies by **25%** by migrating the legacy Ruby on Rails code to a microservices-based architecture, integrating caching, ElasticSearch, and BigQuery.
- Built 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%**.
- Improved the 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.
- Spearheaded 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

- Engineered 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 **7<sup>th</sup> IEEE CSITSS** conference. [\[Link\]](#) 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). [\[Link\]](#) Apr 2023 - Jul 2023