

# SHUBHAM SRIVASTAVA

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## Education

**New York University | Courant & Stern | NYC | GPA – 3.952** Jan 2021 – Aug 2022 (expected)  
*M.S. in Information Systems* [Information Technology Projects, Fundamental Algorithms, Artificial Intelligence, Advanced Topics in Database Systems, Operating Systems, Database Systems, Data Science for Businesses, Corporate Finance, Foundations of Finance, Firms & Markets]  
**Dhirubhai Ambani Institute of Information and Communication Technology | India** Jul 2011 – May 2015  
*B.Tech in Information and Communication Technology* [Graph Theory, Formal Specification and Verification, Discrete Mathematics]

## Technical Skills

- **Machine Learning Frameworks and Libraries:** TensorFlow, PyTorch, Scikit, Pandas, Numpy, Seaborn, Matplotlib
- **Big Data and Cloud Technology:** HDFS, Spark, Kubernetes, Docker
- **Databases:** MySQL, MongoDB, Oracle DB, Memcached, Aerospike, HBase, Redis, Couchbase
- **Languages:** Python, C/C++, Java, SQL, JavaScript, Shell, GoLang
- **Tools:** Storm, Kafka, GCP, RabbitMQ, Spark, LocustIO, Grafana, Git, PowerBI, Dropwizard, Vertx, gRPC, flask, Maven

## Academic Projects

### Distributed Replicated Concurrency Control and Recovery

- Implemented a **distributed transactional database** with **Concurrency Control**, **Deadlock Detection**, **Replication**, and **Failure Recovery** in **JAVA**.
- Leveraged **Available Copies** algorithm for replication using **strict two-phase locking** protocol at each site. Handled read-only transactions using **Multi-version Read Consistency**. Mitigated deadlocks by aborting the youngest transaction.

### Automated cross-sell analytics for recorded voice-calls

- Developed a tool that does speech-to-text conversion for recorded customer service calls, and generates analytics events based on the rules defined for mentions of specific keywords by the customer-service representatives.
- Leveraged **GCP Cloud Functions**, **Firestore**, **GCP Pub-sub**, **GCP Speech-to-text**, and **Flask** for this project. Also benchmarked other speech-to-text solutions by AWS, Azure, IBM, Mozilla for this project.

### Data Science Model for Promotion Targeting and Better Conversions

- Conceptualizing a **predictive analysis** model using **Logistic Regression**, **XGBoost**, **Random Forest**, and **KMeans** to identify the likelihood of user-interaction with promotions based on features like age, gender, income, product category, etc. which could be used for more effective marketing.

## Professional Experience

### Flipkart Internet Pvt Ltd

Software Development Engineer - 3

Bangalore, India

Oct 2020 – Jan 2021

- Researched the patterns and anti-patterns in the existing monolithic **gateway routing system** (300k+ lines of code) powering all user-facing **APIs** (interacting with 50+ **microservices**), and formulated the requirements document for the redesign.
- Collaborated with architects, and stakeholder teams to strategize the **design** for a **horizontally scalable** routing system with proper **separation of concerns** that could scale up to a million queries per second and could support over 200 million users.

Software Development Engineer - 2

Jan 2017 - Sep 2020

- Regulated the design, **development**, maintenance, and **disaster-recovery** plan of multiple high scale **microservices**.
- Researched retrospectively the issues in team-owned systems, and strategized long-term initiatives.
- Spearheaded the redesign of multi-DC, multi-tenant session management platform leveraging the **write-through-cache** and **write-back-cache** patterns, **HBase** with **off-heap bucket cache**, **Memcached**, enabling over 99.99% availability, and a sub-5ms 99<sup>th</sup> percentile latency.
- Collaborated with 20+ teams on several cross-functional initiatives. Mentored 15+ teammates on several projects (helped them ramp-up/grow/improve). Trained the team on HBase, other database choices (**Aerospike**, **Redis**, **Memcached**), tech-stacks (**Storm**, **Kafka**), internal development patterns, and several frameworks.
- Created and documented guidelines for consistent service-health monitoring across all the team-owned systems. Ensured proper documentation, logging, tracing, degradation playbooks, and monitoring for 100% of the team-owned services.

Software Development Engineer – 1

July 2015 - Dec 2016

- Delivered several impactful **API** projects (such as reviews, product-exchange, etc.) using **Dropwizard** and **Poseidon** as a part of the team that managed all user-facing APIs. These APIs were critical for Flipkart UI components. Actively contributed to the development of the API layer, and underlying scatter-gather framework – Poseidon.
- Leveraged **LocustIO** and **GCP** understanding to actively drive the performance testing initiatives for sale-readiness (up to 10x usual load) for multiple major sales.
- Designed, developed, and maintained the reverse geocoding system at Flipkart used for location-based personalization created in Java, using **MongoDB**, and location data from multiple sources.

## LEADERSHIP & CERTIFICATIONS

- Course Assistant & Grading: Assisted Professors with designing the assignments for the course 'Machine Learning for Bioinformatics', and graduate course 'Database Systems'. Helped students and graded the submissions of 160+ students for the course 'Database Systems'. Worked as a grader for 'Applied Cryptography'.
- Received the Udacity Nanodegree for 'Machine Learning Basics'. Participated in multiple hackathons. Won the 'Best Product Hack' at one of the Hackathons at Flipkart.