

# Amogh Kulkarni

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## EDUCATION

**Rutgers University**, New Brunswick, NJ  
*Master of Science in Computer Science*

Expected December 2019  
(GPA: 3.62)

**Courses:** Data Structures and Algorithms, Database System Implementation, Massive Data Retrieval and Storage, Introduction to Artificial Intelligence, Operating Systems Design, Topics in AI: Game Science, Distributed Systems, Massive Data Mining, Implementation of Operating Systems, Computer Networks.

**University of Mumbai**, Mumbai, MH, India  
*Bachelor of Engineering in Information Technology*

June 2015

## TECHNICAL SKILLS

**Proficient:** Java, Python, SQL, Algorithms. | **Familiar:** JavaScript, C, MongoDB, Object Oriented Design and Development.

**Miscellaneous:** Spring, Spring Boot, Hibernate, Hadoop, REST, Flask, MS SQL Server, gRPC, Elasticsearch, Cassandra, Prometheus, Grafana, HTML, CSS, jQuery, Unity3D, Git, Apache Maven, Apache Kafka, Elasticsearch, Docker, Kubernetes, Linux, Jenkins, Microservices.

**Certifications:** Financial Markets – A Beginner's Module by National Stock Exchange (NSE), India.  
Ethereum: Decentralized Application Design and Development.

## PROFESSIONAL EXPERIENCE

*Software Engineering Intern, Aruba, a HPE Company*, Santa Clara, CA

June 2019- August 2019

- Developed a REST based debug API and a dashboard for **Redis**, Postgres SQL and **etcd** datastores and deployed them as a **microservice** using **Kubernetes** and **Docker**.
- Added a **gRPC** service using **protobuf** to remotely add and delete ssh keys to the machines running path quality monitoring service nodes to debug and investigate the service. Had to write code both in C++ and Python to support both websocket and gRPC connections for backwards compatibility.
- Setup a **Prometheus** and **Grafana** instance. Used node exporter to push metrics of machines to Prometheus. Wrote a python script to get ICMP, UDP and iptables statistics to monitor machines, docker-py SDK to fetch pod connection statuses and used text collector to send these custom metrics to Prometheus.
- Configured ingress to allow **nginx** to forward requests to the correct pod services in Kubernetes.
- Built a dashboard to visualize and monitor stats using Grafana.

*Software Engineer, BNP Paribas India Solutions*, Mumbai, India

June 2015- January 2018

- Created a module in **Visual C++** that allows users to automatically populate forms to book trades by importing CSV files.
- Wrote a multi-threaded batch to fetch prices from Bloomberg API parallelly, reduced time of batch from **hours to minutes**.
- Suggested and developed an event triggered notification engine using **JMS topics** to allow external systems to subscribe to messages, replacing **JMS Queues**.
- Implemented a **REST** based reporting engine to schedule and execute reports, allowing users to generate reports on demand with parameters on demand without having to wait for the scheduled time. Using **Hibernate**, programmed the queries to execute in parallel using multiple threads **increasing performance by 15%**.
- Modified existing desktop client in Java Swing to allow users to select data tables and create extract of user baskets and search results using **Apache POI** APIs. **Reduced dependency** on support team for generating SQL extracts and **trained users** in this new feature.

## TECHNICAL PROJECTS

**CryptoAnalyzer (Python 3, Pandas, Influx DB, ccxt, APScheduler)**

May 2018 – Present

- Build an application that connected to several crypto exchanges via ccxt API and WebSockets and created a local database of crypto transactions.
- Wrote modules to calculate values for several technical trading indicators like MACD, RSI etc. for investor insights.

**Smuriken (C#, Unity 3D, Android)**

April 2016 – June 2016

- Developed an avoider style game using Unity 3D game engine leveraging Animation Controller and UI toolkit.
- Integrated social plugins and Google Analytics for usage statistics and deployed on the Google Play store.

**Implementation of KMeans Algorithm (Java, Apache Hadoop)**

March 2019

- Wrote a chained MapReduce program to compute K-Centroids using Manhattan and Euclidean distances as metrics and analysing the performance of the two.

**GraphDB (Java, Atomix)**

March 2019 – April 2019

- Implemented a prototype graph datastore using Atomix, a distributed, fault-tolerant framework for building distributed applications running using RAFT Consensus protocol with functions for add, remove and search nodes.