SAHIL PAREKH

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EDUCATION

University of Pennsylvania, MSE in Computer and Information Science **Aug 2023 – May 2025**
Relevant Courses: Software Systems, Analysis of Algorithms, Machine Learning, Big Data Analytics, Networks and Security (TA)
University of Mumbai, Bachelor of Engineering in Information Technology **Aug 2016 – May 2020**
Relevant Courses: Distributed Systems, Computer Networks, Operating Systems, Cloud Computing, Advanced Databases, Data Analytics

TECHNICAL SKILLS

- **Languages:** Java, Python, SQL, C++, C, JavaScript, HTML, CSS, bash, R
- **Frameworks:** Spring Boot, JUnit, Mockito, PyTorch, Pandas, NumPy, scikit-learn, Matplotlib, Node.js, Express.js, jQuery
- **Technologies:** Apache Kafka, Apache Spark, EhCache, Docker, Kubernetes, AWS, Jenkins,, MongoDB, Oracle BDB
- **Tools and OS:** Git, Gradle, Maven, Control-M, Dynatrace, Postman, Pentaho, Splunk, Jira, Confluence, Linux, Ubuntu

PROFESSIONAL EXPERIENCE

Software Engineer II JP Morgan Chase & Co. **Feb 2023 – Jul 2023**
- Engineered and deployed a distributed real-time regulatory reporting streaming system using Java integrated with JPMC's global trade repository to facilitate a daily FX trade volume of $\sim$700k in Malaysia
- Spearheaded a data-driven approach using Java Spring framework, Python and bash to re-engineer a monolithic application with a microservice architecture on Docker and observed an increase in throughput by 250%
- Guided and collaborated with new SDEs on building REST interfaces using Spring Boot to create a direct trade correction channel to front office and achieved a 45% reduction in over-reporting to regulatory authorities globally

Software Engineer I JP Morgan Chase & Co. **Aug 2020 – Jan 2023**
- Conceptualised a scalable streaming framework using Spring to process $\sim$4mil messages per day and designed a cloud architecture to run 8 microservices and setup CI/CD using Jenkins and job automation using Control-M
- Implemented metrics module in Java to analyse performance bottlenecks, optimised SQL queries and table structure in Oracle and implemented EhCache as in-memory cache to observe a latency reduction of 85%
- Formulated an exception-management microservice and Apache Kafka communication endpoints to aid in monitoring and telemetry which resulted in a 75% reduction in 3 months for daily trade exceptions

Software Engineer Intern JP Morgan Chase & Co. **Jan 2020 - Jul 2020**
- Built project to modernise MiFID real-time reporting application conforming to changes in internal data model output and improved throughput by reducing average latency by 66%
- Bench-marked Apache Kafka and Oracle BDB on Docker and Kubernetes in single and multi-threaded ecosystems to make architectural decision based on throughput and latency

PROJECTS

Spotify Trending Song Prediction **Mar 2024 – May 2024**
- Utilized Pandas, NumPy, and Plotly to perform EDA, data pre-processing, and data cleaning on datasets with 1.6m rows. Employed an Apache Spark Cluster setup on AWS to enhance scalability and performance
- Up-sampled data to reduce class imbalance and designed iterative versions of Deep Neural Network and Decision Tree based models by hyperparameter tuning. Achieved a remarkable F1-score model with 99.63% accuracy

Learning Management System *(Tata Institute of Social Sciences)* **Dec 2020 – Aug 2021**
- Worked as Backend developer and prepared the product's API structure using Node.js and Express.js achieving average request round trip time of 26ms
- Programmed the application to be stateful and lightweight to run in low bandwidth and handle upto 50000 concurrent connections and setup AWS VPC network infrastructure, DynamoDB, S3 and CloudWatch

CERTIFICATIONS

- **AWS Solutions Architect - Associate** by Amazon Web Services **Oct 2020**
- **Deep Learning** with National Programme on Technology Enhanced Learning **Dec 2019**
- **Applied Algorithms and Data Structures with Java** with Morgan Stanley **Apr 2018**

PUBLICATION

An Approach to Reducing Uncertainty Problem in NIDS (IEEE) **May 2019 – Apr 2020**
- Constructed a 4 node LAN for simulating cyber attacks using bash scripts, collected data packets using Wireshark and analysed the data using KNN clustering
- Programmed a Genetic algorithm using R and Python as a feature selection algorithm run for 100 epoch and passed the transformed data through 3 classification algorithms for a comparative study
- Published and presented at the 15th IEEE Conference on Industrial and Information Systems in the category of Communication and Information Technology at IIT Ropar, India (DOI: 10.1109/ICIIS51140.2020.9342634)

EXTRACURRICULARS

- Guitarist for Penn Sargam, one of America's first student-groups dedicated to promoting South Asian fusion music
- Senior correspondent at SPark, official college editorial of Sardar Patel Institute of Technology, Mumbai
- Participated in the Mumbai chapter of the world's largest Beach Cleanup campaign by Afroz Shah, *UN Champion of the Earth*