Sankalp Chapalgaonkar

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Education

Texas A&M University **Aug 2022 - May 2024**
Master's of Science, Computer Science College Station, USA

Indian Institute of Technology Madras **Jul 2015 - May 2019**
Bachelor of Technology, Electrical Engineering Chennai, India
Coursework: Analysis of Algorithms, Machine Learning, Data Mining, Information Storage Retrieval, Deep Learning, Parallel Computing, Applied Cryptography, Operating Systems, Computer Architecture, Linear Algebra

Experience

Hewlett Packard Enterprise **May 2023 - Aug 2023**
Software Engineering Intern Andover, Massachusetts
- Developed a Python Stress Testing Utility for analyzing kubernetes resource management, incorporating microservices and leveraging gRPC HTTP/2 protocol with Protobufs. Designed a real-time resource allocation monitoring dashboard.
- Built on Red Hat Linux, it features 300+ stressor mechanisms. Deployed to kubernetes using docker containerization.

JP Morgan Chase & Co **Jul 2019 - Jul 2022**
Software Development Engineer II Mumbai, India
- Led the legacy transformation project, moving from monolithic design to microservices having 3-Tier reactive web applications built using rxJava, Spring Boot, Kafka, Elasticsearch, Oracle, SQL, GraphQL, Docker and Kubernetes.
- Designed an automated job scheduling tool for Data Processing of 5M+ records using Spring Cloud Data Flow.
- Developed an optimal data reconciliation algorithm processing 10M+ records daily. Built an interactive dashboard in React featuring automated reconciliation by publishing Kafka events. Implemented distributed caching to reduce latency.

JP Morgan Chase & Co **May 2018 - Jul 2018**
Technology Analyst Intern Mumbai, India
- Built a document-inventory workflow supporting 10+ format uploads (stored in Amazon S3) assisting 2000+ investors.
- Developed using React, Spring Webflux, SQL Server and deployed it to the in-house cloud using Jenkins tools for CICD.

Technical Skills

Languages: Reactive Java, Python, C++, R, SQL, GraphQL, gRPC, Protobufs, Typescript, Reactjs, Redux

Frameworks: Pandas, Keras, Tensorflow, scikit-learn, Spring Boot, Kafka, AWS, Docker, Kubernetes, Reddis, Linux

DBMS & Security: Spring Security, Oracle, SQL Server, Elasticsearch, Hibernate, Amazon S3, Liquibase, Kerberos

Academic Projects

Deep Learning Projects, *Prof. Anxiao Jiang* **Aug 2023 - Dec 2023**
- Achieved 89% accuracy in hand-written-digit recognition classifier using CNN for noisy images of the MNIST dataset.
- Developed machine translation model using transformers, attaining an 97% accuracy on an artificial language dataset.

Travelix - Personalized Travel Recommendation System, *Prof. James Caverlee* **Jan 2023 - May 2023**
- Built a recommendation system using Matrix Factorization with Autoencoders and Collaborative Filtering techniques.
- Utilized the Yelp dataset with 7M+ reviews from 2M+ users for generating data-driven personalized recommendations.
- Developed using Python Flask, React and TensorFlow to orchestrate the execution of ML models and deployed to AWS.

Data Mining and Analysis, *Prof. Ni Yang* **Jan 2023 - May 2023**
- Executed Lasso, Boruta feature selection with SVM, Random Forest, Gradient Boosting Machines for classification tasks.
- Clustering analysis employing PCA for feature reduction, evaluating various score metrics (Silhouette, NBClust, CH Index, Elbow method) for optimal K, and implemented K-means, DBSCAN & Hierarchical clustering algorithms.

Algorithmic Trading Strategies, *Prof. Michael Ketzenberg* **Jan 2023 - May 2023**
- Developed an automated trading strategy using SVM and XGBoost in R using precise trading signals and indicators.
- Conducted rigorous back-testing on S&P 500 Energy Stocks utilizing historical data from January 2016 to 2017.
- Deployed the strategy to production to execute trades automatically and enabled live reporting of portfolio statistics.

Mars Rover Team, *Software and Electronics Lead, Indian Institute of Technology Madras* **May 2016 - Apr 2018**
- Co-founded a 3-tier team of 30+ members to develop 2 Mars Rovers, represented IIT Madras in University Rover Challenge organized by Mars Society, USA and ranked 25^{th} among 90+ global teams.
- Coded drift compensation algorithms that dynamically corrected rover's path during automated terrain traversal task.

Achievements

IIT-JEE Advanced 2015 Secured All India Rank **514** amongst 200,000 shortlisted candidates

Won **Circle Of Excellence Award in the Above & Beyond Category** at JPMC for best performer of the year in 2020.