

Viraj Mehta

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EDUCATION

University of Southern California, Los Angeles, CA

Master of Science in Computer Science (**Honors Student**)

Coursework: Analysis of Algorithms, Data Mining, Deep Learning, Natural Language Processing, Operating Systems.

Aug 2021-May 2023

GPA 4.00/4.00

D. J. Sanghvi College of Engineering, University of Mumbai, India

Bachelor of Engineering in Information Technology

Coursework: Intelligent Systems, Web Technologies, Database Systems, Distributed Systems, Software Engineering.

Aug 2014-May 2018

GPA 9.18/10.00

TECHNICAL SKILLS

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|------------------------|--|
| Programming Languages | Python, Java, C, Scala, Bash, JavaScript, Object Oriented Programming |
| Machine Learning | PyTorch, Scikit Learn, Keras, TensorFlow, Pandas, NumPy, Matplotlib, Seaborn |
| Databases | MySQL, PostgreSQL, Redis, MongoDB |
| Platforms & Frameworks | Microsoft Azure, Spark, Docker, Kubernetes, Flask, PySpark, Ansible |
| Web Technologies | Angular, Node.js, Express.js, EJS, HTML, CSS, Bootstrap, REST API, AJAX |

PROFESSIONAL EXPERIENCE

University of Southern California

Aug 2022-Dec 2022

Graduate Teaching Assistant – Foundations and Applications of Data Mining

- Tutor **over 200 students** & assist in design of coding assignments, quizzes, and course material.

Red Hat Inc.

May 2022-Aug 2022

Software Engineering Intern – Ansible Automation Platform on Clouds | *Azure, Kubernetes, Ansible, Python, PostgreSQL*

- Designed workflows to estimate database **size vs time costs** for data backup and restoration hosted on **Microsoft Azure Cloud**.
- Optimized Ansible AWX database backup duration **by 30%** & backup space requirements **by 90%**.
- Created reliable data storage environment by configuring Persistent Volumes via **Kubernetes** for failure recovery.

J.P. Morgan Chase & Co.

Jul 2018-Jul 2021

Software Engineer III – Fixed Income Credit Tech | *Python OOP, Java, SQL, Flask, Rest API, FIX, Agile*

- Designed resilient & scalable multiprocessing architecture for client-to-client trading increasing business **liquidity by 20%**.
- Automated client allocations processing **eliminating 90 minutes** average daily effort for Sales Assistants.
- Delivered bond hedging capabilities & reduced manual effort for Trading Assistants by **average of 2 hours daily**.
- Devised a **trade processing and management** system to incorporate **Brexit** related trading regulations.
- Automated Portfolio Trading across e-trading platforms and **decreased trade execution time by 90%**.
- Modeled functionality to process **algorithmic trades** bolstering efficiency & volume of pricing trades by over **50 trades daily**.
- Mentored new hires in Mumbai, London, New York & Buenos Aires virtually as **development lead** of team.

PROJECTS

Weenix Operating System | *C, Linux*

- Executed **multithreading** in user space by using pthread library.
- Implemented creation and synchronization of processes and threads along with context-switching abilities.

Stock Search & Analysis Engine | *Angular, Node.js, JavaScript, REST API, AJAX*

- Built a **real-time responsive website** to present stock prices, statistics & social media trends for 500 companies.
- Simulated real-world trading abilities by building **Portfolio Manager & Watchlist Manager**.
- Leveraged **FinnHub API** to obtain stock information & **HighCharts API** to produce interactive charts & graphs.

Yelp Recommendation System | *Spark, XGBoost, Vader, Numpy, Pandas*

- Extracted & created additional **statistical features** from user & business ratings in Yelp dataset enhancing predictions.
- Performed **Sentiment Analysis** to produce correlation features & trained **XGBoostRegressor** for user rating predictions.
- Achieved **6th position over 200 students** in recommendation system competition with an **RMSE of 0.9728**.

Precondition Inference System | *PyTorch, HuggingFace*

- Created a **natural language reasoner** to determine whether a precondition sentence enables or disables given statement.
- Employed **NLI-Deberta-v3-base** pre-trained cross-encoder from HuggingFace library to train inference model.
- Achieved a **validation accuracy of 91.3%** and a **test accuracy of 90.6%** for predicting correct inference.

LEADERSHIP AND INVOLVEMENT

- Core team - AWS DeepRacer Mumbai. Organized virtual racing leagues with over **400 participants and 85 teams**.
- Co-founder and Secretary - DJ init.ai club. **Mentored** junior batches of Computer Science in AI and its sub-domains.
- Winner – **Led a team of 6** at **JP Morgan's ML Mayhem** contest organized by Mumbai Machine Learning community.
- Winner – India Code for Good **hackathon** held by **JPMorgan Chase & Co.**