

TEJAS SATISH NAVALKHE

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Work Authorisation: United Kingdom- Graduate (PSW) Visa, India- Citizen

Professional Summary

Innovative **AI Engineer** with **3+ years** of experience in designing and deploying **AI/ML solutions** for fintech, edtech, transportation, capital market (algorithmic trading) industry. Proficient in **deep learning**, and **NLP**, with hands-on experience in **model development**, **MLOps**, **real-time data pipelines**. Skilled in leveraging frameworks like **PyTorch**, **TensorFlow**, **Hugging Face** to build scalable AI systems. Strong expertise in **algorithmic trading systems**, **software development**, and **big data technologies**. Experienced in building **recommendation system**, **low-latency trading algorithms**, and **dynamic pricing models** to drive business insights and improve system performance. Passionate about solving complex problems using AI and driving business innovation through cutting-edge technology.

Professional Experience

Freelance AI/ML Engineer

09/2024 – Present

Self-Employed

Remote

Skills: NLP, Scikit-learn, Transformer-based Embeddings (BERT), TF-IDF, Python, AWS (EC2, S3, RDS)

- Developed and deployed end-to-end **AI/ML solutions** across **fintech, edtech, and algorithmic trading domains**, including **real-time trading systems** using Python, Flask, Redis, and WebSocket.
- Built **NLP and content-based course recommendation engine** using TF-IDF, Word2Vec, BERT, and GPT models; implemented **automated retraining pipelines** and integrated both with **cloud-based platforms**.
- Designed scalable **REST APIs** with **Flask/FastAPI** to serve **real-time predictions**; integrated with AWS services (EC2, S3, RDS) and **Dockerised ML models** for deployment and testing.
- Automated data pipelines** and **web scraping** using Python; executed **hyperparameter tuning** and **A/B testing** to optimize model performance.

Data Science Intern

05/2024 – 09/2024

Co Wheels Car Club

Newcastle, United Kingdom

Skills: Python, PyTorch, TensorFlow, Spark, Databricks, Dynamic Pricing, Machine Learning, Hadoop, SQL

- Designed and developed a **dynamic pricing model** to optimize **car-sharing profitability**, leveraging machine learning models for **5 vehicle types**.
- Analysed **historical booking data (2019-2024)** from **30,000+ users** across 600+ vehicles (including 200+ electric vehicles) to **predict optimal hourly and daily pricing** based on location popularity, peak hours, time of day, and seasonality.
- Developed a web-based simulation tool using Flask and JavaScript, enabling **real-time adjustments of pricing strategies** and visualisation of their **impact on revenue**.
- Increased **projected revenue by 19.32%** compared to static pricing by implementing demand-based pricing strategies.
- Automated data preprocessing and feature engineering for 39 variables, improving prediction accuracy and **reducing manual data processing time by 40%**.
- Reduced integration errors by 25%** by automating data synchronisation between the pricing tool and Co Wheels' booking system.
- Provided business insights** that helped Co Wheels evaluate a **transition from fixed pricing to a dynamic pricing model**, **enhancing profitability** while maintaining user satisfaction.

Freelance Software Engineer – Algorithmic Trading

09/2022 – 04/2024

Finvestox Capital

Remote, India

Skills: Flask, API, AWS, Redis, Selenium, Docker, Algorithmic Trading, WebSocket, Linux, SQL, forecasting models

- Designed and implemented an **algorithmic trading system** with **sub-millisecond trade execution**, increasing **trading volume by 20%** and **returns by 10%** in three months.
- Developed a **real-time pricing data pipeline** using Redis caching, improving **data retrieval speed by 35%** and ensuring **99.9% uptime** for trading insights.
- Built and deployed an automated trading platform with **risk management for futures and options**, integrating **automated broker logins** via Selenium and **TradingView-based forecasting**, **reducing trade execution time by 30%**.
- Developed an **interactive financial dashboard** with Plotly, enhancing **real-time analytics accuracy by 25%** for better trading decisions.
- Deployed on AWS using Docker, improving **scalability and execution speed by 50%**, and utilised SQL with forecasting models for continuous data availability.
- Implemented a Redis pub/sub model for **multi-server communication**, ensuring efficient data flow between stock analysis and trade execution servers.

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Web Development Intern

07/2022 – 09/2022

Vitaecura Consultancy Services Pvt. Ltd.

Indore, India

Skills: Web development, UI/UX design, IT operations, JavaScript, jQuery, IT project management, business development

- Worked on web development, UI/UX design, and IT operations.
- Frontend Technologies: HTML, CSS, Bootstrap, jQuery, JavaScript.
- Assisted in business development and IT project management.

Education

Master of Science in Data Science (With Specialisation in Artificial Intelligence)

09/2023 – 08/2024

Newcastle University, Newcastle Upon Tyne, United Kingdom

Grade: Distinction

Modules: Exploratory Data Analysis (EDA), Statistics for Data Science, Big Data Technology, Machine Learning, Deep Learning, Image Informatics, Data Management.

Bachelor of Technology in Computer Science Engineering

08/2019 – 07/2023

Prestige Institute of Engineering Management & Research, Indore, India

CGPA (8.78/10)

Modules: Data Structure & Algorithm, Software Engineering, Project Management, Machine Learning, Database Management Systems, Cloud Computing.

Projects

Scalable AI-Driven Algorithmic Trading System with Real-Time Automatic Trading

- Designed and developed an end-to-end algorithmic trading system, including risk management, auto-buy/sell features, and real-time trade execution, resulting in a 10% increase in ROI for users.
- Deployed a trading app on AWS (EC2, S3, RDS) with 99.9% uptime, using Docker and Kubernetes to reduce deployment time by 25% and ensure scalability.
- Built real-time data pipelines using Apache Spark Streaming and WebSockets, reducing data latency by 40% and improving trading accuracy.
- Automated trade execution and data synchronization using cron jobs, reducing manual intervention by 50% and improving system efficiency.
- Integrated APIs from multiple brokers (e.g., AngelOne, Zerodha) and implemented automated testing with Selenium, reducing integration errors by 30%.

AI-Driven Face Recognition Attendance System

- Developed an **automated attendance system** using **OpenCV, Spark ML**, reducing manual effort by **70%**.
- Achieved an impressive **99.38% accuracy rate** by utilised **Amazon S3** for large-scale storage.

Technical Skills

Programming Languages: Python, R, JavaScript

Big Data: Sqoop, Hive, Apache Spark, Snowflake, Databricks

Databases: SQL, MySQL, PostgreSQL, MongoDB, Cassandra, Redis Cache

Data Visualisation: Power-BI, Plotly, Seaborn

MLOps: Docker, Kubernetes, MLflow, Kubeflow, Airflow, AWS SageMaker

Data Engineering and Cloud: AWS (EC2, S3, RDS, Lambda, Glue), Azure, ETL Pipeline, Data Lakes, Hadoop

Data Science & Machine Learning/Deep Learning: Pandas, NumPy, TensorFlow, Keras, PyTorch, Scikit-learn, Hugging Face

Testing & Automation: Selenium, Pytest, A/B Testing, Unit Testing, Performance Testing

Server-side Scripting: Linux, Unix

Web Development & API: Flask, FastAPI, WebSocket, RESTful API, HTML, CSS, React.js, Angular

Project Management: Jira, Monday, Asana, Git

Certifications

Machine Learning with Scikit-Learn

Madecraft | 08/2024

Data Science & Advance Machine Learning using Python

Grras Solutions | 01/2022

Awards

- **NCL+ Award** by Newcastle University **05/2024**
- **Best Student of the Batch (2019-2023) Award** by Prestige Institute of Engineering Management & Research **04/2023**

Publications

- **'Design and Development of Smart Virtual Assistant Using Latest Tools and Technologies'**, International Journal of Core Engineering & Management