MADHVAN TYAGI

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EDUCATION

B.S, Computer Science   Sept 2021 – May 2025
Queens College, City University of New York   GPA: 3.6

WORK EXPERIENCE

Machine Learning Research Assistant

Queens College, CUNY - With Prof. Chialing Tsai (chialing.tsai@qc.cuny.edu)   2024 Sep – 2025 Jan

- Led the research team on Large Language Models (LLMs) for tabular data processing. Achieved 90-93% accuracy in classification and 81-86% in regression tasks, surpassing traditional benchmarks by 40%.
- Engineered fine-tuning pipelines for GPT-3.5 and GPT-4 models, implemented novel approaches for structured data transformation derived from extensive research analysis.
- Synthesized 25+ research to develop innovative ML techniques, implementing reproducible production-ready code on GitHub.

Software Developer Intern   2023 Jun – 2023 Aug

Ingelt Board

- Developed REST APIs for software used all over India by more than 10,000 users, and Improved Client-Server Latency by testing and updating the architecture.
- Developed test automation framework using Jest and Cypress, reducing QA cycle time substantially.
- Deployed Docker and Kubernetes containers on AWS EC2 cloud.

PROJECTS

AI-Powered Course Assistant Bot.   [GitHub | Live]
Technical Skills: JavaScript, React, MongoDB, OpenAI API, ExpressJS, TensorFlow, Tesseract, GCP
Engineered a multi-modal AI bot processing lecture content (text/images/slides) to provide instant contextual responses, serving 100+ students with 24/7 course assistance.

CareSphere Schedule Management System [GitHub | Live]
Technical Skills: React, NodeJS, Redis, ExpressJS, JWT Auth, REST/SOAP API, AWS
Built a secure platform serving 1000+ caregivers to streamline patient visit management for CareSphere company, automate shift tracking, process real-time compensation, and instant access to patient histories and care protocols, achieving 95% user satisfaction.

ACHIEVEMENTS AND CERTIFICATIONS

- Machine Learning A-Z: Python   Apr 2023
- Top 5 Runner-up in HackRU 2024 Hackathon – Rutgers University
- Solved 300+ LeetCode problems in **backtracking**, **dynamic programming**, and **complex graph algorithms**
- **Ranked in the 92nd percentile globally** on Chess.com
- Natural Language Processing | DeepLearning.ai   Feb 2022
- Python Programming | Google

Machine Learning Skills:

Deep Neural Networks, Transformer Models (BERT, GPT), TensorFlow, Natural Language Processing (NLP) Techniques, Large Language Models, JAX, Reinforcement Learning, Model Compression, Knowledge Distillation, Model Fine-Tuning, Model Deployment, Evaluation Metrics (F1-Score, Precision-Recall), Classification Tasks, Imbalanced Datasets Handling, Cassandra, Apache Airflow, Talend

Programming & Software Engineering Skills:

Python, Java, C++, JavaScript/TypeScript | Agile Methodologies (Scrum, Kanban) & TDD | Docker & Kubernetes | Cloud Platforms (AWS, Azure, Google Cloud) & CI/CD Tools (Jenkins, Travis CI) | Relational Databases (MySQL, PostgreSQL) & NoSQL (MongoDB, Cassandra) | Testing Frameworks (Selenium, Jest, Mocha) | Teamwork & Project Management, Tableau, Plotly, ggplot2