Yashika Patil

Greater Boston, MA | yashikapatil278@gmail.com | (774) 636-8863 | LinkedIn | GitHub

Professional Experience

Graduate Teaching Assistant, *UMass Dartmouth College of Engineering – Dartmouth, MA*   **Sep 2024 – Present**
- Fostered collaboration and critical thinking by mentoring over 70 students in Data Visualization, guiding them to master Python, JavaScript (D3.js), HTML, CSS, and Tableau.
- Delivered hands-on lectures on creating impactful, data-driven visualizations and provided detailed feedback on projects, improving students' ability to interpret complex data patterns.

Machine Vision Intern, *New Bedford Research & Robotics – New Bedford, MA*   **May 2024 – Aug 2024**
- Integrated AI into robotics, achieving 98% accuracy in object detection, pick-and-place, and real-time tracking with a Cognex camera and an ABB GoFa robot.
- Built predictive algorithms in RAPID and Python, enabling autonomous robot operation without location data, reducing failure rates by 20%.
- Developed vision-guided algorithms to detect parasites in fish fillets on a conveyor belt, providing a scalable solution for a marine-based start-up.
- Collaborated with engineers and scientists to implement machine learning models into robotic workflows, contributing to brainstorming sessions, and implementing end-to-end solutions.
- Presented technical findings to diverse audiences, including non-technical stakeholders, demonstrating strong communication and attention to detail.

Data Scientist, *Yoshops – Chennai, India*   **Jun 2022 - Jul 2023**
- Developed scalable ETL pipelines and optimized workflows for multi-source data integration, ensuring high data quality, using SQL and Python.
- Built dynamic sales dashboards by integrating multi-source data into Snowflake, using SQL for data transformation, and ensuring the reports met stakeholder needs.
- Designed, trained, and deployed machine learning models on AWS (SageMaker, EC2) and Databricks, improving predictive accuracy by 15% and driving efficiency.
- Containerized machine learning models using Docker, ensuring easy deployment and integration into production.
- Delivered technical insights via Tableau visualizations, utilizing statistics to drive business outcomes.

Skills

Programming: Python (Scikit-learn, TensorFlow, PyTorch), R, Javascript, C++, SQL (PostgreSQL, MySQL), Bash
Machine Learning & AI: GenAI (GANs, VAEs, Diffusion Models), NLP (BERT, GPT), LLMs (Hugging Face, Fine-tuning)
MLOps & Deployment: MLflow, TensorFlow Serving, Docker, Kubernetes, CI/CD (Jenkins, GitHub Actions)
Big Data & Cloud: Apache Spark, Kafka, Airflow, Databricks, Snowflake, AWS (SageMaker, S3), Azure
Core Competencies: Problem Solving, Communication & Collaboration, Curiosity, Attention to Detail, Time Management

Notable Projects

Advancing Visual Reasoning in Vision & Language Models | *MS Thesis*   **Sep 2024 - Present**
- Enhanced visual reasoning in VLMs and LLMs for safer, more reliable AI interpretation of visual data.
- Fine-tuned LLMs for intricate visual tasks, gaining expertise in model optimization and problem-solving.
- Experimented with multi-modal datasets, showcasing expertise in problem-solving and large-scale data handling.

LangChain for Novel Summarization & Question Answering   **Jan 2024 - Aug 2024**
- Built a RAG system with LangChain and Llama2 for summarization and QA, improving response accuracy by 25%.
- Benchmarked RAG against TextRank, conducting a comparative analysis to demonstrate advanced NLP expertise.
- Refined model outputs through error analysis and iterative tuning, enhancing summary and response quality.

Education

University of Massachusetts Dartmouth   **Dartmouth, MA**
Master of Science in Data Science   *Sep 2023 - May 2025*
Indian Institute of Science and Research Bhopal   **Bhopal, India**
Bachelor of Science in Data Science & Engineering   *Aug 2019 - May 2023*

Certifications

- Google Advanced Data Analytics (Google)
- Virtualization, Docker, and Kubernetes (Duke University)
- Microsoft Cloud Support Associate (Microsoft)
- Large Language Model Operations (Duke University)