Varun Date

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SUMMARY

Passionate and self-motivated machine learning engineer with a strong foundation in data analysis and model development. Proficient in Python, PyTorch, and Scikit-learn and building supervised learning models for prediction and classification. I have hands-on experience in natural language processing and image classification. Seeking to apply my skillset to innovative AI solutions in the industry.

EDUCATION

University of Texas at Arlington, Arlington, USA   Jan 2024 – Dec 2025
Master of Science – Computer Science GPA: 4.0/4.0
Relevant courses: Machine Learning, AI, Neural Networks

Manipal Institute of Technology, Manipal, India   Aug 2016 – Jul 2020
Bachelor of Technology – Computer Science GPA: 3.84/4.0
Relevant courses: NLP

WORK EXPERIENCE

University of Texas at Arlington, Arlington   Sept 2024 – present
Graduate Research Assistant

- Created a Python class to connect to Snowflake database and run queries against the database.
- Created and fine-tuned **prompts** for large language models (**GPT-4**, **GPT-4o**) to extract conversation data from JSON records.
- Used **RNNs**, **LSTMs,** and **LLMs** on the conversation data to classify them into positive and negative sentiments.

Accenture, Hyderabad   Sept 2020 – Dec 2023
Senior Software Engineer

- Worked on development, testing, and maintenance of client's web application using **Python** and **Selenium** in an agile team.
- Optimized the web application and achieved a load time reduction of **30%**.
- Spearheaded proactive communication efforts across **3 teams**, addressing dependencies and mitigating issues promptly, decreasing dependency bugs by **50%**.

Samsung Research India, Bangalore   Jan 2020 – Jun 2020
Intern

- Analyzed Indian market data, gaining insights into buying behaviors to drive sales and enhance user experience.
- Worked on data and ML pipeline for the entire lifecycle of data starting from Amazon S3, preprocessing, model training, and evaluation.
- Trained a **random forest** model on user data to predict user's interest for targeted advertisements, achieving a **50% increase in click-through rate**.

PROJECTS

Predicting clothing apparel type: (Tech: PyTorch, Pandas, Python)   Apr 2024

Created a CNN model using VGG architecture to classify images of clothing apparel. Trained the model on the Fashion MNIST data set, experimented with various image enhancements and tuned hyperparameters to get a **7740 trainable parameter model with 87% accuracy**.

Implemented Vision Transformer Model: (Tech: PyTorch, Matplotlib, Python)   July 2024

Implemented code for the Vision Transformer from the paper "**An Image is Worth 16 x 16 Words**". Created classes for embeddings, multilayer perceptron, and transformer encoder block. Used transfer learning along with **PyTorch ViT** model to predict food type from images in a custom dataset.

Object Detection Model: (Tech: PyTorch, Python)   Sept 2024

Created a model for detecting objects using the **YOLOv1** algorithm and **mean average precision (mAP)**. Achieved test **mAP of 0.9** on the **Pascal VOC** dataset.

SKILLS

Programming Languages: Python, C++
Frameworks and tools: PyTorch, scikit-learn, pandas, matplotlib, Git, AWS, JIRA
Database applications: Oracle, MySQL, Neo4j, Toad