

# 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 25  
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  
Batchlor 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 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**

- Collaborated with agile teams to develop, test, and maintain a client's web application using **Python** and **Selenium**.
- Optimized the web application and achieved a load time reduction by **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**

- Developed India User Profile, gaining insights into market buying behaviors to drive sales and enhance user experience.
- Created pipeline to load data from Amazon S3, process it and then train the model.
- Created a **random forest** model trained on user data to predict user interest for targeted advertisements achieving **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 Fashion MNIST data set, experimented with various image enhancements and tuned hyper parameters 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 (mAR)**. Achieved test **mAR of 0.9** on **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