VISHNU VARDHAN

+1 647-879-5759|| vishnuvardhan576@gmail.com

Professional Summary

- Results-driven **Machine Learning Engineer** with over 3 years of experience in data-driven decision-making, predictive modeling, and automation. Strong expertise in **Python**, **SQL**, **Tableau**, and **Power BI**, with a proven ability to optimize data pipelines, extract actionable insights, and enhance business operations through **AI/ML** solutions.

Skills

Programming Languages: Python, SQL, Java
Web Technologies: JavaScript, HTML, CSS, D3.js, Flask (Python)
Technologies: Machine Learning (Supervised, Unsupervised, Clustering), Deep Learning (NLP, Image Segmentation), Data Visualization (Tableau, Power BI, D3.js)
Tools & Cloud: AWS (EC2, S3, Lambda, SQS, Batch, CloudWatch), Docker, GitHub, VS Code, PyCharm, Jupyter
Databases: MySQL, PostgreSQL
ML Libraries: Pandas, NumPy, Scikit-learn, TensorFlow, Keras, XGBoost, NLTK
Algorithms: YOLOv3, Mask-RCNN, Decision Trees, Random Forests, SVM, Naïve Bayes, K-Means, Linear/Logistic Regression, Ensemble Methods

Experience

Machine Learning Engineer -Innovasea, Halifax, NS, Canada Oct 22 - Feb 24

- Developed **Python scripts** to scrape and compile **fish video data**, creating a **universal dataset for ML models**.
- Designed and implemented **ETL** pipelines using **Apache Airflow** and **AWS Glue**, ensuring seamless data flow and timely updates.
- Applied exploratory **Data analysis** techniques to clean and annotate video data, improving machine learning model performance for fish classification and detection.
- Replaced the existing **Manual** approach of finding videos where fish are present from thousands of videos
- Automated weather data extraction using **AWS Lambda** and **CloudWatch**, scheduling **API** calls to fetch and store structured weather data in **Excel** for analysis.

Machine Learning Intern -Innovasea, Halifax, NS, Canada May 21 – Aug 22

- Developed a **Novel** method of **Classification**, **Detection**, and **Counting** fish species using an **Object detection** algorithm called **Yolov3** and lightweight python library called **Norfair**.
- Developed time-efficient alternative solutions to Innovasea's current fish counting methods.
- Published research paper **[Link]** in **Frontiers in Marine Science journal** in collaboration with innovasea systems.
- **Annotated** thousands of images and trained machine learning models using **Google Colab**, optimizing model performance through a **10-hour training process** for improved accuracy and efficiency.
- Integrated data augmentation techniques to diversify training datasets, resulting in a 12% reduction in model overfitting.
- Used **VBA** to automate repetitive **Excel** tasks and processes, significantly reducing time spent on manual operations of filtering required video data

Data Analyst - Tata Consultancy Services, Bengaluru, India Jun 18 - Aug 19

- Extracted, cleaned, and transformed **100K+ retail records** using **SQL and Python**, improving data accuracy and reporting efficiency.
- **Predicted** the sales of each different category of product using **Machine learning** models such as **Decision tree**, **SVM**, and **Linear regression**.
- Developed **interactive dashboards in Power BI and Tableau**, visualizing key retail metrics such as sales trends, customer behavior, and revenue forecasts.
- **Built classification models using machine learning (Scikit-Learn, XGBoost)** to segment customers based on purchase patterns, increasing targeted marketing effectiveness.
- Leveraged **PySpark** for big data processing, improving computational efficiency for large-scale retail data analysis.
- Conducted root cause analysis on data discrepancies, ensuring data integrity and minimizing reporting errors by 25%.

Projects

Clickbait Detection (Python, ML Concepts, NLP Concepts) [Code]

- Designed a deep learning-based classification model to distinguish between clickbait and non-clickbait headlines, leveraging NLP techniques such as TF-IDF and word embeddings.
- Implemented and fine-tuned models using LSTMs, transformers (BERT), and traditional ML classifiers (Random Forest, SVM).

Feature Extraction (Python, ML Concepts) [Code]

- Designed an NLP-based pipeline to extract key features from text documents, leveraging Named Entity Recognition (NER) and TF-IDF.
- Applied **unsupervised learning (K-Means, LDA)** to cluster similar documents in the Reuters corpus, improving text categorization accuracy by 20%

Salary Prediction (Python, Pandas, Numpy, Sckit-learn) | [Code]

- Built a **regression-based model** to predict salaries using the Adult Census dataset, incorporating feature engineering techniques to enhance model interpretability.
- Compared multiple regression algorithms (Linear Regression, Decision Trees, XGBoost) to optimize performance, achieving a **12% lower MAE** than baseline models.

Education

Master's: Computer Science - Dalhousie University, Canada
Bachelor's: Computer Science - Amrita University, India

Accomplishments

- Published in Frontiers in Marine Science (26k+ views, 61 citations). [Link]
- Authored a paper in IEEE. [Link]