

# MAHANAND ADIMULAM

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## EDUCATION

<b>Rochester Institute of Technology</b>	Dec 2024
Master of Science in Data Science	<b>GPA-3.96/4</b>
<b>Kalinga Institute of Industrial Technology,</b>	May 2022
Bachelor of Technology in Electronics & Computer Science Engineering (Honors)	<b>GPA-3.6/4</b>

## EXPERIENCE

<b>Rochester Institute of Technology</b>	Rochester, NY
Python and Java Tutor	Jan 2023 - Present

- Enhanced comprehension of complex programming concepts in **Python** and **Java** for **over 90 students** by adapting teaching methods to meet **diverse learning styles**.
- Leveraged strong **communication skills** to clarify complex programming concepts in Python and Java, fostering independent learning and significantly enhancing students' coding capabilities

### HighRadius

India

Full Stack Data Scientist Intern

Jan 2021 – Mar 2021

- Developed an **Automated Invoice Management System** to refine B2B operations servicing **over 5000 invoices** by creating a full-stack Invoice Management Application with HTML, CSS, React, Java, and SQL.
- Increased data accessibility and **analysis speed** by managing over 5000 records in a **MySQL database** on a MySQL server, utilizing SQL for querying and **real-time integration** through **JDBC**.
- Achieved an **89% forecasting accuracy** for **invoice close dates** through the implementation of a **Random Forest** machine learning algorithm using Python, enabling instant predictions for both existing and new invoices.
- Achieved enhanced decision-making capabilities through the development of a **real-time dashboard** in Tableau, displaying **KPIs** like total outstanding receivables, DSO, Aging Analysis, and Payment Trends.

## PROJECTS

**Deepfake Slayer** ([GitHub](#)) [PyTorch, DataLoader, Torchvision, Transforms, Torch, Matplotlib]

- Reimplemented the **FFD model in PyTorch**, achieving **96% accuracy** in **classifying defake** and real images and **generate masks** highlighting altered regions in defake images with **98% accuracy**.
- Engineered a **robust data loader** using PyTorch to seamlessly handle the intricate **FaceForensics++ dataset**, ensuring data integrity and accuracy while processing **over 2 TB** of video data from a research computing database.
- Developed an **uncertainty estimator** over the FFD model, **quantifying the confidence level** in the model's predictions, resulting in improved trustworthiness of the classification results.

**Multi-Headed Model for Toxic Comment Classification** ([GitHub](#)) [Python, TensorFlow, TextVectorization, LSTM, Bidirectional]

- Leveraged TensorFlow and **LSTM Bi-directional layers** to effectively **classify online comments** into threats, obscenities, insults, and identity-based hate speech, achieving a **precision of 0.91** and **recall of 0.92**.
- Enhanced model performance through meticulous preprocessing and feature engineering, resulting in a robust training set for accurate classification.
- Improved user interaction with the **toxicity classification model** by designing a user-friendly application utilizing **Gradio**, facilitating immediate feedback for users on comment toxicity across various categories.

**Credit Card Fraud Detection using Autoencoders** ([GitHub](#)) [Python, Tensorflow, Keras, Matplotlib, Numpy, Pandas, Autoencoder]

- Achieved an **AUC score of 0.95** in credit card fraud detection, indicating the model's high performance in distinguishing between fraudulent and legitimate transactions by **utilizing Autoencoders** with Python and TensorFlow.
- Demonstrated expertise in handling a **highly imbalanced dataset**, where fraudulent transactions represented only **0.172%** of the total, resulting in **effective detection despite class imbalance**.
- Optimized the fraud detection model, achieving a **97.77% true positive rate** by identifying **55,594 fraudulent transactions** out of **56,864**, while ensuring a **precision rate of 99.97%** and limiting **false positives to 17**.
- Reduced unnecessary alerts** and potential customer inconvenience by achieving a **false positive rate of 17.35%** through a balanced approach.
- Maintained an overall **accuracy of 97.74%** across a dataset of 56,962 transactions by carefully balancing the detection of fraudulent transactions against the minimization of false alerts.

## SKILLS

**Programming Languages:** Python, Java, R, C++

**Databases:** SQL, MongoDB, PostgreSQL, Neo4j, SQLite, Apache Spark

**Machine Learning (ML):** Scikit-learn, TensorFlow, PyTorch, Keras, Pandas, Numpy, OpenCV, BeautifulSoup, NLTK, Gradio

**Data Analysis and Statistical Analysis:** JMP, Minitab, Tableau, QGIS, Seaborn, Matplotlib, MS Excel, Power BI

**Tools and IDE:** Jupyter Notebook, PyCharm, Google colab, Git, SQL Workbench, Jira