JELIN RAPHAEL AKKARA

MASTERS IN PHYSICS OF DATA

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PROJECTS / EXPERIENCE

Time Series Analysis using Transformers

- **Summary:** Collaborated with 3 peers and trained a transformer model to predict a minority event from a heavily imbalanced dataset. Transformer performance (in accuracy and recall) was better and more reliable (with standard deviations of 0.01 - 0.02) compared to traditional models like CNN and DNN (with higher standard deviations).
- **Concepts/Skills used:** Time series analysis, Transformers, Principal Component Analysis, Handling imbalanced datasets using down-sampling and stratification, Communication skills, Teamwork, Inter-Disciplinary Analysis

Fake News Classification using Multinomial Naive Bayes

- **Summary:** Built a statistical text classification model (in R) that recognizes varying degrees of fake news using the Mutlinomial Naive Bayes algorithm. Implemented algorithm in a structured and efficient manner, inspired by SQL, and managed to learn on a large dataset (of 20800 rows, each row containing 4544 words on average) in under 30 seconds.
- **Concepts/Skills used:** R Language, Statistical Natural Language Processing, Feature Selection using Mutual Information scores, Pre-processing text documents, Regex

Distributed Analysis of Big Data using Dask

- **Summary:** Collaborated with 2 peers to implement anomaly detection on a large industrial dataset (~5GB) using Dask. Developed anomaly detection strategy and used a Map-Reduce distributed approach with the help of a virtual cluster of three worker nodes.
- **Concepts/Skills used:** Big Data Analytics, Dask, Distributed Analysis, Map-Reduce paradigm, Critical Thinking, Parallel Processing, Dask Dashboard, Task Graph Pipeline Analysis, Cluster Computing

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EDUCATION

Masters in Physics of Data — 2022 - 2024
University of Padua, Italy
GPA (Tentative) : 28.1 / 30
Relevant Coursework: Human Data Analytics, Big Data Computing, Natural Language Processing, Vision and Cognitive Systems, Advanced Statistics, Machine Learning

B.Tech in Engineering Physics — 2018 - 2022
National Institute of Technology, Calicut, India
GPA : 8.43 / 10
Graduated with Distinction

CERTIFICATIONS

- **Google Data Analytics Professional Certificate** (2022): Analyzing data with SQL, R and Tableau
- **Language Proficiency in English:** IELTS Band 8, CEFR Level C1 (2022)
- **Trinity Certified Instrumentalist:** Guitar (Grade 3), Electronic Keyboard (Grade 4), University Band Lead Guitarist (2018 - 2022)

SKILLS

- **Languages:** English (native), Malayalam (native), Hindi (intermediate)
- **Programming Languages:** Python, R, SQL
- **Programming Frameworks:** Dask, PySpark, HTML, CSS, Bootstrap, LATEX
- **Programming Libraries:** TensorFlow, Keras, PyTorch, Scikit-Learn, Pandas, NumPy, SciPy, Seaborn, Matplotlib