JELIN RAPHAEL AKKARA

MASTERS IN PHYSICS OF DATA

Email: jelinraphaelakkara@gmail.com
Portfolio: https://jelinr.github.io/
LinkedIn: linkedin.com/in/jelin-raphael-akkara
GitHub: https://github.com/JelinR

CERTIFICATIONS

Google Data Analytics Professional Certificate (2022)
Analyzing data with SQL, R and Tableau

Language Proficiency in English (2022)
IELTS Band 8, CEFR Level C1

INITIATIVES

Venice International Workshop, 'Physics of Data', Co-Organizer
(Held on 23-24 May, 2024)

TEDxCalicut Co-Organizer (2019)
Manged guest logistics and communication.

SKILLS

Programming Languages
Python, R, SQL

Programming Frameworks
Dask, PySpark, Docker

Programming Libraries
TensorFlow, Keras, PyTorch, Scikit-Learn, Pandas, NumPy, SciPy, Seaborn, Matplotlib

Languages
English (native), Malayalam (native), Hindi (intermediate), Italian (beginner)

RESEARCH EXPERIENCE

Research Intern (Ongoing): Visual Intelligence and Machine Perception (VIMP), University of Padova
Designing a modular framework for efficient Visual SLAM mapping (2D Semantic Maps, Topological Maps) and developing an novel mapping method to enhance navigation efficiency.

PROJECTS

Lightweight CNN for Speech Keyword Spotting
Designed a lightweight CNN (32k parameters) achieving 89% accuracy, and 37ms inference, rivaling SoTA models like TDNN (250k parameters, 94% accuracy).

YOLOv8n Object Detection using Blob Enhancers
Enhanced YOLOv8n for small human detection (far away or occluded persons) by 1.1%, with a minor preprocessing speed increase of 2 ms (7 ms to 9 ms).

Efficient Fake News Recognition with Naive Bayes
Developed a fake news classifier with Multinomial Naive Bayes, leveraging SQL for efficient term-context matrix handling, training 20,800 rows in under 30 seconds.

Learning Immanuel Kant using LLM and RAG
Tested RAG with Llama-2, FAISS, and HuggingFace on Kant's works, optimizing prompts and parameters.

Audio Generation using Variational Autoencoders
Generated speech keyword samples with VAE, optimizing latent dimensions, testing architectures, and ensuring a smooth latent space.

EDUCATION

Masters in Physics of Data GPA (Tentative) : 28.3 / 30 2022 - 2025
University of Padua, Italy

Relevant Coursework: Natural Language Processing, Vision and Cognitive Systems, Human Data Analytics, Machine Learning, Reinforcement Learning

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