

JELIN RAPHAEL AKKARA

MASTERS IN PHYSICS OF DATA

Email: jelinraphaelakkara@gmail.com

Portfolio: <https://jelinr.github.io/>

LinkedIn: [linkedin.com/in/jelin-raphael-akkara](https://www.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

SKILLS

Programming Languages

Python, R, SQL

Programming Frameworks

Dask, PySpark, Docker, LangChain, HuggingFace

Programming Libraries

TensorFlow, Keras, PyTorch, Scikit-Learn, NLTK, spaCy, OpenCV, YOLO, Detectron2

Languages

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

INITIATIVES

Venice International Workshop, 'Physics of Data', Co-Organizer

Held on 23-24 May, 2024

TEDxCalicut Co-Organizer (2019)

Manged guest logistics and communication.

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 for semantic understanding of philosophical texts by optimizing prompts and parameters.

Audio Generation using Variational Autoencoders

Collaborated with 2 peers to generate speech keyword samples with VAE, while testing architectures, and ensuring a smooth latent space.

EDUCATION

Masters in Physics of Data University of Padua, Italy

GPA (Tentative) : 28.3 / 30 2022 - 2025

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

B.Tech in Engineering Physics National Institute of Technology, Calicut, India

GPA : 8.43 / 10 2018 - 2022

First Class with Distinction