# JELIN RAPHAEL AKKARA

## MASTERS IN PHYSICS OF DATA

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## PROJECTS / EXPERIENCE

### Speech Recognition for Small-Footprint Keyword Spotting

- **Summary:** Collaborated with a peer and compared CNN, DNN, Transformer models' performances for small-footprint keyword spotting. Tuned parameters like pooling, striding, Mel Filterbanks, type of transform (STFT vs Discrete Wavelet Transform).

- **Concepts/Skills used:** Audio Signal Processing, Feature Extraction, Keyword Spotting, Keras, Attention mechanism

### Fake News Classification using Multinomial Naive Bayes

- **Summary:** Built a statistical text classification model (in R) to detect varying degrees of fake news in a parallelizable manner. Trained 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 parallelize an anomaly detection task on a large industrial dataset (~5GB) using Dask. We utilized 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, Parallel Processing, Dask Dashboard, Task Graph Pipeline Analysis, Cluster Computing, Critical Thinking

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## EDUCATION

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|---|---|---|
| **Masters in Physics of Data**<br>**University of Padua, Italy** | GPA (Tentative) : 28.1 / 30<br>**Relevant Coursework:** Human Data Analytics, Big Data Computing, Natural Language Processing, Vision and Cognitive Systems, Advanced Statistics, Machine Learning | 2022 - 2024 |
| **B.Tech in Engineering Physics**<br>**National Institute of Technology, Calicut, India** | GPA : 8.43 / 10<br>First Class with Distinction | 2018 - 2022 |

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## 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), Italian (beginner)
- **Programming Languages:** Python, R, SQL
- **Programming Frameworks:** Dask, PySpark, Docker, HTML, CSS, Bootstrap, LATEX
- **Programming Libraries:** TensorFlow, Keras, PyTorch, Scikit-Learn, Pandas, NumPy, SciPy, Seaborn, Matplotlib