

UVINI RANAWEERA

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I'm interested in developing cutting-edge machine learning (ML) models and leveraging data analytics to enhance data-driven decision-making.

Research Interests: [Natural Language Processing](#) [ML for Business Applications](#) [Statistical Modeling](#) [Data Analytics](#)

Research Directions: [Explainable AI](#) [LLMs & RAG](#) [Ethical & Fair AI Systems](#) [Community Data Analysis](#)

EDUCATION

Bachelor of Business Science (Honours), Specialised in Business Analytics *Dec 2019 - Mar 2024*
University of Moratuwa, Sri Lanka *GPA: 4.11 of 4.2*

- **Thesis Title:** "Multi-class Document Classification for Reports on Digital Development: A Case Study on USAID DEEM"

RESEARCH EXPERIENCE

A Quantum Approach for Portfolio Optimisation | *Python, Quantum Computing* 
Supervisor: Prof A. Mahasinghe, University of Colombo *Apr 2024 - Jul 2024*

- Tested the power of quantum annealing to overcome unrealistic assumptions in the vanilla Markowitz model. This study reformulated the Markowitz optimisation model into an integer program, enhancing its applicability in real-world financial contexts.

RAG-enabled Chatbot | *Python, LLMs* 
Supervisor: Dr U. Ganegoda, University of Moratuwa *Mar 2024 - Jul 2024*

- Developed a chatbot that performs accurate context-aware question answering with the help of Retrieval Augmented Generation (RAG). Additionally, this project involved comparing the performance of different open-source LLMs in RAG.

An Automated Tool for E-Document Classification | *Python, NLP* 
Supervisors: Dr Tiloka de Silva & Supun Gothama, University of Moratuwa *Nov 2022 - Nov 2023*

- Automated the document classification process of USAID DEEM - a database holding reports on digital development interventions, by proposing a One-vs-Rest model. The study explores how combining multiple classification algorithms can yield better results, especially when dealing with unbalanced datasets.

INDUSTRY EXPERIENCE

Acuity Knowledge Partners, Sri Lanka *Full-time, Hybrid*

Consultant - Data Technology Solutions *Jan 2025 – Mar 2025*

- Automated Python scripts to minimise repetitive tasks in file management, data extraction, data processing, and data validation as a part of digitalisation efforts.

Analyst - Data Technology Solutions *Apr 2024 – Dec 2024*

- Developed and deployed time-series models with geolocation data to forecast sales trends across multiple industries.
- Conducted Python workshops for over 500 undergraduates across three state universities.

Intern - Data Technology Solutions

Oct 2023 – Mar 2024

- Built a tool to detect and extract content from unstructured financial tables using Python libraries and table transformers.
- Developed a chatbot that lets users converse with documents. Several open-source LLMs, including variants of Llama and Mistral, were tested for their performance.

TEACHING EXPERIENCE

University of Moratuwa, Sri Lanka

Full-time, On-site

Lecturer - Department of Decision Sciences

Jan 2025 – Present

- Undergraduate courses delivered: DA3111 - Text Analytics, DA4131 - Advanced ML Applications for Business, DA2111 - Statistical & Machine Learning, DA3131 - Data Mining
- Co-supervise undergraduate research projects in the cross-section of Data Science with finance, health, marketing, tourism and education.

PUBLICATIONS

[1] U. Ranaweera, B. Mawitagama, S. Liyanage, S. Keshan, T. de Silva, and S. Hewawalpita, "Comparison of Machine Learning Models to Classify Documents on Digital Development", in Communications in Computer and Information Science, Springer, Nov. 2023. doi.org/10.1007/978-981-99-7969-1_5 **conference**

[2] R. Dayarathne, U. Ranaweera, and U. Ganegoda, "Comparing the Performance of LLMs in RAG-based Question-Answering: A Case Study in Computer Science Literature", in Lecture Notes on Data Engineering and Communications Technologies, Springer, Jan. 2025. doi.org/10.1007/978-981-97-9255-9_26 **conference**

[3] C. Perera, U. Ranaweera, and I. Mahakalanda, "Mining Strategic Business Insights from Online Reviews: A Case Study in the Southern Coast of Sri Lanka", in Lecture Notes in Networks and Systems, Springer 2025. **in-press**

[4] V. Nuhansa, I. Mahakalanda, U. Ranaweera and R. Krishthogu, "What She Signs They Mine: Quantifying the Gaps in FemTech Privacy Policies", IEEE 2025. **in-press**

HONOURS & AWARDS

Gold Medal in Business Science

2024

Awarded to the Business Science Graduand who has obtained the highest Overall Grade Point Average at the Bachelor of Business Science Honours Degree examinations.

Dean's List Awardee

2020-2024

Eight Dean's List awards (all semesters) for maintaining a Semester Grade Point Average of 3.8 or above at the Bachelor of Business Science Honours Degree semester examinations.

National Merit Scholarship

2018

Awarded for students who excelled at the university entrance exam: Ranked second in Sri Lanka.

TECHNICAL SKILLS

Languages: Python, R

Libraries & Technologies: Scikit-Learn, NLTK, LangChain, pySpark, Pandas, Transformers

Concepts: Natural Language Processing, Machine Learning, Data Analytics, Data Visualisation

Tools: Visual Studio Code, Git, Power BI, Tableau

SERVICE & LEADERSHIP

Conference Secretary | 8th International Conference on Business Research (ICBR 2025)

Co-editor | 14th Sri Lanka Economic Research Conference (SLERC 2025)

Founding Member & Tutor | PyData Sri Lanka (Present)

Global Volunteer | Tempo Music Academy, Egypt (Mar 2023)

Vice President Professional Development | Rotaract Club of University of Moratuwa (2020-23)

RELEVANT COURSEWORK

Artificial Intelligence: Machine Learning **DA4110 (A+)**, Text Analytics **DA4210 (A+)**, Deep Learning **DA4130 (A)**

Mathematics & Statistics: Calculus **DA1420 (A+)**, Multivariable Calculus and Linear Algebra **DA2410 (A+)**, Probability & Statistics **DA1110 (A+)**, Multivariate Methods **DA3420 (A)**, Stochastic Processes **DA3430 (A-)**

Data Analytics: Data Visualization **DA2120 (A)**, Data Wrangling **DA3110 (A)**, Data Mining **DA3130 (A)**

**References available upon request.*