



Rasika Edirisinghe

Marie Skłodowska-Curie Actions Doctoral Fellow

🔗 CASCADE MSCA Doctoral Network | University College Cork
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Summary

Marie Skłodowska-Curie Actions (MSCA) Doctoral Fellow at University College Cork, funded through the CASCADE Horizon Europe doctoral network. My PhD research focuses on language modelling and visualisation for parallel text analysis, examining how texts change across translation, paraphrase, adaptation, simplification, and machine generation.

I combine NLP, large language models, similarity metrics, and interactive visual analytics to study relationships between related texts in ways that are measurable and interpretable. I develop enrichment pipelines, scoring methods, and visual interfaces for difficult text-pair analysis, especially cases where surface similarity is low but meaningful textual relationships remain.

Alongside my doctoral research, I bring four years of industry experience in data analytics and BI engineering (Azure Databricks, Power BI, Python), academic teaching at UCC and in Sri Lanka, and a current secondment at Nimbus Research Centre contributing an NLP and language-mediated AI perspective to trustworthy digital ecosystems.

Education

University College Cork

Ireland

PhD in Computer Science (Reading), Marie Skłodowska-Curie Actions Doctoral Fellow

Sep 2024 – Sep 2027

Thesis: Language Modelling and Visualization for Parallel Text Analysis

CASCADE Horizon Europe MSCA Doctoral Network

- Developing methods for classifying and measuring parallel text pairs across translation, paraphrase, simplification, stylistic transfer, and machine-generated text.
- Building a unified enrichment pipeline combining LLM-based scoring, similarity metrics, and complexity measures for comparative text analysis.
- Designing interactive visualisation tools to make model outputs and text-pair distributions interpretable for NLP and Digital Humanities researchers.
- Investigating difficult text reuse cases where existing tools struggle with highly rewritten, adapted, or allusive material.

Robert Gordon University

Aberdeen, UK

M.Sc. Business Analytics, Distinction

Sep 2021 – Sep 2023

Thesis: Twitter Sentiment Reason Mining Framework to Identify Major Problems in US Healthcare Industry

Grade: A

Key modules: Data Management (A) · Web Mining (A) · BI Tools & Applications (A) · Intro to Big Data & Data Science (A)

Cardiff Metropolitan University

Cardiff, UK

B.Sc. (Hons) Business Information Systems

Nov 2016 – Oct 2018

Thesis: Computer-Aided Diagnosis System for Lung Cancer Detection (Java-based CADe system)

Pearson Edexcel

UK

BTEC Higher National Diploma, Software Development

May 2014 – May 2016

OOP · Data Structures & Algorithms · Networking · Web Applications · Database Development

Academic Experience

University College Cork

Ireland

Teaching Assistant & Co-Lecturer

2025/26

Data Visualization for Machine Learning (CS3205 / CS6426)

- Revamped lecture and lab materials for the 2025/26 cohort.
- Delivered lectures and hands-on Python lab sessions.
- Produced all lecture slides for the 2026 delivery.
- Assessed and graded student assignments and examinations.

University of Ruhuna, Dept. of Electrical & Information Engineering

Galle, Sri Lanka

Visiting Lecturer

Aug 2023 – Sep 2024

- Introduction to Data Visualization with Power BI — DAX, dashboards, Gestalt principles, color theory.
- Excel for Data Science — PivotTables, time-series, statistical analysis, Solver.
- Data Preprocessing & Cleaning / Data Splitting & Cross Validation

Sri Lanka Telecom Training Centre, Sri Lanka Telecom PLC

Welisara, Sri Lanka

Visiting Lecturer

Aug 2023 – Sep 2024

Pearson BTEC delivery:

- Fundamentals of AI & Intelligent Systems (K/618/5660) — AI types, NLP, conversational AI, ethics.
- Big Data & Visualization (J/618/6251) — Python, Jupyter, Power BI, DAX, data governance.
- Business Intelligence (M/615/1641) — BI systems, OLAP, descriptive & predictive analytics.

Industry Experience

EFL Global

Data Analyst

Colombo, Sri Lanka (Hybrid)

May 2023 – Sep 2024

- Automated global finance reporting across 39 countries & 70+ offices (Python, VBA, Advanced Excel).
- Modelled and maintained Azure Databricks backend for automated MIS, AR & AP reporting.
- Built Power BI & Tableau dashboards; implemented workflows via Power Automate & Logic Apps.
- Managed Azure Analysis Services, Data Lakes, Blob Storage, and Synapse Analytics.

Affno Asia Pacific

Implementation Engineer

Colombo, Sri Lanka

Nov 2022 – May 2023

- Designed and deployed BI solutions for supply chain analytics; acted as Technical Business Analyst.
- Provided training and support to clients; worked with Amazon EC2 & MongoDB Atlas.

SYNERGEN Health

Operations Analyst

Colombo, Sri Lanka

Sep 2019 – Nov 2022

- Managed Qlik-Sense cloud-based RCM BI platform (Doctrix) for real-time KPI & SLA monitoring.
- Led process training across multiple clients in Revenue Cycle Management.
- Implemented Python & VBA automation for financial reporting; maintained AWS DynamoDB & Kinesis.

SYNERGEN Health

Associate Operations Analyst (Intern)

Colombo, Sri Lanka

Mar 2019 – Sep 2019

Client reporting, process monitoring, data sanity checks, and trade support.

Global System Solutions

Business Analyst (Intern)

Colombo, Sri Lanka

Sep 2018 – Mar 2019

Requirements gathering, use case development, reporting specification, pre-sales support.

Publications & Research Output

Jul 2025: Rewriting Tradition: Quantifying Change in Lady Gregory's Irish Legends

R. McCarthy, R. Edirisinghe, J. O'Sullivan, C. Ó Gallchoir, R. Minghim, Ó. Murphy

DH2025: Alliance of Digital Humanities Organizations, Lisbon, Portugal

Abstract Accepted

Aug 2023: Sentiment Reason Mining Framework for Analyzing Twitter Discourse on Critical Issues in US Healthcare Industry

R. Edirisinghe, P. P. G. Dinesh Asanka

International Conference on Smart Computing and Systems Engineering 2023

ieeexplore.ieee.org/document/10215010

Work in Progress

- Text Reuse Detection with Large Language Models** — PhD research, UCC (CASCADE MSCA)
- Interactive Visualization for NLP Interpretability** — open-source tool, PhD research, UCC
- Parsing Hiberno-English Dictionary Entries: A Hybrid Rule-Based and LLM Approach** — under preparation; presentation accepted at *Digital Humanities Congress 2026*, Sheffield, Sep 2–3 2026
- Lost in Dispatch: Language-to-Action Drift in LLM-Controlled Robots** — workshop paper in preparation, Nimbus Research Centre / inTrusted project

Presentations & Academic Contributions

Oct 2025: Beyond Translation: Rethinking 'Parallel Text' Across Disciplines

UCC Digital Humanities Colloquium, University College Cork

Apr 2025: Language Modelling and Visualization for Parallel Text

CACSSS PhD Lightning Talks, University College Cork

Jun 2023: Sentiment Reason Mining Framework ... (paper presentation)

International Conference on Smart Computing and Systems Engineering 2023

Feb 2025: Peer Reviewer — 8th International Research Conference on Smart Computing and Systems Engineering

Oct 2023: Evaluator — System Development Project Poster Presentation, University of Kelaniya

Aug 2023: Curriculum Reviewer — Foundation to Data Science, University of Ruhuna

Current Secondment

Nimbus Research Centre

Research Secondment — inTrusted Project

Cork, Ireland

Apr 2026 – Jul 2026

Research secondment on the TU RISE-funded inTrusted project, which studies trust in collaborative digital ecosystems through technical assurance, governance, compliance, participatory design, and Living Lab methods. My contribution brings an NLP and language-mediated AI perspective to the project, exploring how intent is preserved or altered when natural-language instructions pass through agentic systems.

Skills & Technologies

Languages: Python, SQL, Java, JavaScript, C#, R, VBA

NLP & LLMs: HuggingFace Transformers, spaCy, Gensim, NLTK, OpenAI API, Prodigy

ML / DL: PyTorch, TensorFlow, Keras, scikit-learn, XGBoost

Visualization: Power BI, Tableau, QlikView/Sense, Plotly, Matplotlib, Seaborn, DAX

Cloud: Azure (Databricks, Synapse, Blob, Logic Apps), AWS (EC2, DynamoDB, Kinesis), MongoDB Atlas

Dev Tools: Git, Jupyter, Weka, Orange, HTML/CSS, ASP.NET, Power Automate, Bash

Soft Skills: Technical communication with non-technical audiences, tutoring & mentoring, business process design