Maryam Bala

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Education

University of Southampton, United Kingdom
iPhD AI for Sustainability (2025 - 2029)

University of Aberdeen, United Kingdom
MSc. Artificial Intelligence, Distinction (2024)

Carleton University, Canada
BEng. Architectural Conservation and Sustainability

Work Experience

Research Intern, University of Aberdeen – Aberdeen, UK July 2024 – Sept 2025

- Conduct manual annotation of feedback patterns in child-adult dialogues to develop a high-quality dataset for machine learning analysis
- Analyse interaction patterns using traditional machine learning techniques and LLMs to uncover key behavioural insights
- Design and implement iterative experiments to optimise model performance, contributing to a manuscript for peer-reviewed publication

Research Assistant, Aberdeen Foyer – Aberdeen, Uk Feb 2024 – Apr 2024

- Conducted in-depth research and facilitated interviews with management staff to evaluate and enhance reflective practices within the organisation
- Analysed data to identify key organisational challenges and developed a comprehensive toolkit adopted company-wide to support reflective processes
- Delivered actionable insights and recommendations to senior management, directly contributing to organisational improvement initiatives

Analytical Products Researcher, The Scottish Government – Edinburgh, Uk June 2023 – Sept 2023

- Analysed data platforms used by public sector statisticians, delivering actionable insights to improve analytical tools and efficiency
- Collaborated with stakeholders, including universities and The Data Lab, to research data-related skill sets of graduates from Scottish institutions
- Produced detailed reports and visualisations that supported senior leadership in strategic decision-making and planning

Business Intelligence Officer , Palmpay Limited – Lagos, Nigeria Dec 2019 – Dec 2022

- Conducted market research and simplified complex data into actionable reports, directly contributing to a 20% increase in customer acquisition through market expansion initiatives
- Collaborated with the product development team to align products with customer needs, enhancing user experience and driving revenue growth
- Built and maintained dashboards and reports, empowering stakeholders with data-driven insights to make efficient and strategic business decisions
- Monitored KPIs and generated insights that improved operational efficiency and supported long-term strategic planning

Graduate Structural Engineer, Laralek Ultimate Limited – Lagos, Nigeria Sept 2018 – July 2019

- Participated in design reviews and drafted structural plans using AutoCAD and Revit, contributing to enhanced project efficiency and accuracy
- Verified construction documentation conformed to quality assurance standards and completed engineering calculations to ensure compliance with project requirements
- Supervised construction workers on site, ensuring adherence to project specifications and safety protocols while fostering a collaborative work environment

Skills

Languages: Python, R

Packages & Frameworks: PyTorch, TensorFlow, Scikit-learn, Scipy, NLTK, Pandas, NumPy, Gensim, Spacy, SHAP

ML/NLP: Large Language Model (LLM), Explainable AI (XAI), Deep Learning, Computational Linguistics, Generative AI, Responsible AI, Data Ethics, Data Visualization

Cloud Computing: Google Colab, HPC (High-Performance Computing Cluster)

Publications & Conference Presentations

Maryam Bala, Johannes Heim, Elspeth Edelstein, Arabella Sinclair. Pragmatic Modelling in Language Learning: Caregiver Question-Answer Feedback in Child-Directed Dialogue. LREC2026, Palma de Mallorca

Johannes Heim, **Maryam Bala**, Arabella Sinclair. Exploring caregiver intervention on early question-answer sequences. LAGB2024, Newcastle