

Ravidu Rammuni Silva

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Nottingham, United Kingdom

Summary

Doctoral researcher in Artificial Intelligence and Hourly Paid Lecturer in Computer Science at Nottingham Trent University, with over two years of full-time commercial experience designing, building, and deploying production AI systems for international clients in healthcare, manufacturing, and property technology. Current research focuses on generative AI, LLM post-training (SFT, GRPO reinforcement learning) and agentic inference for personalised education, alongside explainable AI (XAI) and computer vision. Work is published in *IEEE Transactions on Multimedia*, the *NeurIPS 2026 Workshop*, *UKCI*, and *SN Computer Science*, accompanied by open-source toolkits and benchmarks. Currently teaching undergraduate modules in C++ Programming, Mathematics for Computing, Database Engineering, and Software Design.

Education

Nottingham Trent University

10/2024 - Present

PhD in Computer Science

Nottingham, UK

- Theme: Leveraging Generative AI to enhance educational systems and deliver a personalised educational experience for transitional learners
- Expected completion: 2027

Nottingham Trent University

09/2022 - 09/2024

MSc in Data Science (with integrated industrial placement)

Nottingham, UK

- Award: Higher Distinction | GPA: 15.0 out of 16.0
- Dissertation: ArtBrain: Explainable AI for Classification and Attribution of AI-Generated Art and Style

University of Westminster

09/2016 - 09/2021

BSc (Hons.) in Computer Science

London, UK

- Award: First-Class Honours | Score: 81%
- Dissertation: Parallelised Deep Convolutional Neural Networks for Pathology Detection and Localisation in Chest X-Rays

University of Kelaniya

04/2018 - 04/2021

BSc Physics, Pure Mathematics and Electronics

Kelaniya, Sri Lanka

- Award: Second-Class Honours | GPA: 3.21 out of 4.00
- Project: Facial Recognition based Door-lock System

Teaching Experience

Nottingham Trent University, Department of Computer Science

08/2025 - Present

Hourly Paid Lecturer

Nottingham, UK

Contributed to the following modules alongside doctoral research:

- **Year 1 UG:** C++ Programming, Mathematics (for Computing)
- **Year 2 UG:** Database Engineering, Software Design and Implementation
- **BSc Apprenticeship:** Data Science Systems Analysis and Design

Research

Research interests: Generative AI and LLMs in education; Compact LLMs; reinforcement learning and agentic inference; personalised learning; explainable AI (XAI); computer vision and medical image analysis.

Publications & Preprints

Visually Grounded Reinforcement Learning for LLM Programmatic Animation Generation in Interactive Execution Environments

12/2026

Workshop | NeurIPS 2026 Workshop on Foundations of LLM Post-Training in Changing Environments |

<https://ravidusilva.com/assets/pdf/rammunisilva2026visually.pdf>

ArtBrain: An Explainable End-to-End Toolkit for Classification and Attribution of AI-Generated Art and Style

10/2026

Journal | IEEE Transactions on Multimedia | <https://doi.org/10.1109/TMM.2026.3743638>

LessonBench-V1: A Benchmark Dataset for Evaluating AI Lesson Generation Agents

07/2026

Preprint | arXiv | <https://doi.org/10.48550/arXiv.2607.13041>

Training and Agentic Inference Strategies for LLM-based Manim Animation Generation	04/2026
<i>Preprint arXiv https://doi.org/10.48550/arXiv.2604.18364</i>	
Large Language Model Approaches to Educational Video Generation Using Manim	12/2025
<i>Conference UKCI 2025 - Springer Nature https://doi.org/10.1007/978-3-032-07938-1_26</i>	
Generative Artificial Intelligence and the Future of Education: A Systematic Review of Trends, Trustworthiness and Technological Evaluation	12/2025
<i>Preprint Research Square https://doi.org/10.21203/rs.3.rs-8248369/v1</i>	
FM-G-CAM: A Holistic Approach for Explainable AI in Computer Vision	12/2023
<i>Preprint arXiv https://doi.org/10.48550/arXiv.2312.05975</i>	
Recent Developments and Limitations in Recommender Systems: A Review	10/2022
<i>Conference IEEE NILES 2022 https://doi.org/10.1109/NILES56402.2022.9942405</i>	
Effective Utilization of Multiple Convolutional Neural Networks for Chest X-Ray Classification	09/2022
<i>Journal SN Computer Science (Springer Nature) https://doi.org/10.1007/s42979-022-01390-9</i>	
An Extensive Survey of Machine Learning Based Approaches on Automated Pathology Detection in Chest X-Rays	01/2021
<i>Conference IEEE FRUCT 28 https://doi.org/10.23919/FRUCT50888.2021.9347605</i>	
Full list & abstracts: https://ravidusilva.com/publications/ Google Scholar: scholar.google.com/citations?user=IS2bTmwAAAAJ	

Industry Experience

Ensera Design (formerly Kinneir Dufort)	09/2023 - 09/2024
<i>Software Engineer (Placement)</i> <i>Bristol, UK</i>	

Postgraduate placement within the MSc Data Science sandwich course, delivering software projects for multinational clients, primarily in healthcare.

- **AI-assisted breast cancer diagnosis** | *Python, PyTorch, FastAPI*: Developed the back end for an internal project deploying an existing CNN model, focusing on deployment architecture, application functionality and explainability of predictions.
- **AI natural stone classifier** | *C#, .NET, WinUI 3, C++*: Built a Windows application using the MVVM pattern for a Windows 11 IoT kiosk, integrating an SVM-based classifier; the application was validated and deployed to 80 kiosks.
- **Generic driver library** | *C, C++, Python, CppUTest, STM32*: Developed a reusable CRC calculation module with unit tests for embedded software development, and a Python terminal application to automate release workflows.
- **Online catalogue** | *ReactJS, TypeScript, SharePoint*: Developed an internal management tool in SharePoint for a multinational healthcare company.

BooleenLab	07/2021 - 09/2022
<i>Engineer - AI Research & Technology</i> <i>Colombo, Sri Lanka</i>	

Promoted from Associate Engineer within six months. Led the Research and Development team on research-based commercial projects with clients in the USA, UK and Singapore.

- **Intelligent male STD support platform (HeHealth)** | *Python, PyTorch, Flask, AWS*: Led back-end and database development for a platform comprising a doctor portal, admin portal and mobile application; designed and deployed a two-fold, semi-serverless AWS architecture, and co-developed the CNN model, saliency maps and reasoning system.
- **Intelligent property inspection platform (Inspective)** | *Python, TensorFlow, Django, AWS*: Led back-end development of an admin panel and mobile application that lets tenants carry out property inspections, automatically identifying defects and generating housing-authority forms; deployed a custom CNN on AWS.
- **Recommender system for fabrics and elastics** | *Python, PyTorch, FastAPI, AWS*: Initiated and led research on fabric classification for Stretchline, towards an intelligent e-catalogue that recommends products based on customer preferences.

Rootcode Labs	05/2021 - 06/2021
<i>AI Engineer - Intern</i> <i>Colombo, Sri Lanka</i>	

- **ConverseAI recruitment chatbot** | *Python, Rasa, FastAPI, AWS*: Implemented a retraining pipeline with around twenty seconds of downtime; the product won an innovation award.
- **Intelligent CV parser** | *Python, PyTorch, NLTK, AWS*: Contributed to training and retraining pipelines for extracting data from professional CVs.

Subject Expertise & Technical Skills

Programming and Software Development: Python; C++; C#; Java; Swift; JavaScript/TypeScript; MVVM; FastAPI, Django, Flask, ReactJS; Git, GitHub, Bitbucket, Jira

AI, Machine Learning & Data Science: PyTorch, TensorFlow, TensorFlow.js; CNNs, explainable AI (XAI), LLMs (SFT, LoRA/QLoRA, GRPO reinforcement learning, agentic inference)

Cloud Computing: AWS, GCP, Azure, IBM Watson (design and deployment of production-grade architectures)

Mobile Application Development: iOS/Swift; Django-based back ends for production mobile applications

Databases: PostgreSQL, MySQL; database design for production back ends; currently teaching Database Engineering

Certifications: Deep Learning Specialisation (Coursera); Advanced Data Science Specialisation (IBM): 1, 2, 3, 4

Professional Activities

Nottingham Trent University <i>PGR Ambassador, Department of Computer Science</i>	12/2025 - Present <i>(Represents PGRs in NTU CIRC)</i>
Nottingham Trent University <i>Student Ambassador and Student Outreach Ambassador</i>	11/2022 - Present <i>(Promoted university education across Nottinghamshire schools)</i>
Peer Reviewing <i>IEEE FRUCT Conference, IEEE TMM Journal, IEEE IJCNN Conference, IEEE IROS Conference</i>	02/2020 - Present
AIESEC International <i>Mobile Application Developer (Volunteer)</i>	10/2019 - 06/2020

References

Available on request.