LUKE ROSS

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TECHNICAL SKILLS

- Languages: Python | MATLAB | R | Julia | SQL
- ML & GenAI: scikit-learn | PyTorch | TensorFlow | LangChain
- Visualisation: Tableau | Power BI
- Cloud & DevOps: AWS | Azure | Google Cloud

WORK EXPERIENCE

Research Placement
Queensland University of Technology

📅 Feb 2025 – Jun 2025   📍 Brisbane

- Collaborated with mathematicians, biologists & data scientists to answer real-world problems in cellular systems.
- Built stochastic models which were simulated in Python & Julia to forecast tissue growth.
- Presented findings in LaTex documentation & code on GitHub.

Key Project: Simulation-Based Mathematical Models & Parameter Estimation to Interpret Tissue Growth Experiments
- This dry lab project creates a framework for the optimal conditions to grow artificial red blood cells.
- The continuum model was discretised so numerical computation can be carried out in Python & Julia.
- Statistical metrics were collected after the model was discretised as well as parameter identifiability analysis to determine how well parameters fitted to the clinical data.
- Large multi-modal clinical datasets were preprocessed.
- After finding an appropriate fit a simulation for forecasting of tissue growth under different environments was produced. This was important since carrying out the experiment is costly & time-consuming in comparison to the dry lab.

Mathematics Tutor
Self-employed

📅 Nov 2019 – Feb 2025   📍 Remote & in-person

- Taught GCSE to degree level mathematics.
- Created revision guides & problem sheets in LaTex for students.

EDUCATION

MSc Biomedical Engineering (Merit)
The University of Warwick

📅 Oct 2023 – Oct 2024

Postgraduate Ambassador of Warwick Engineering Society
- Improved postgraduate engagement through introducing coffee morning catchups & industry networking events.

Outreach Ambassador of Warwick Manufacturing Group
- Taught disadvantaged students about many fields of engineering through interactive activities & practicals.
- Taught pupils how to code for the systems engineering program.

Key Project: PKPD Modelling to Assess the Effects of Anti-Cancer Agents on Tumour Volume
- Collaborated with GlaxoSmithKline to forecast optimal dosing regimens of anti-cancer agents using MATLAB, Python & Monolix.
- Modified mathematical models from oncology literature to take into account of the combined effects of taking a combination of therapeutics & fitted parameters to sensitive preclinical data.

Key Project: AI-Based EEG Decoding for Assistive Communication in Locked-In Syndrome
- Designed an AI pipeline in MATLAB with the purpose of decoding noisy EEG signal data.
- Signal processing techniques were implemented to improve signal quality.
- Trained classification models using training, validation & test sets.
- Performance was evaluated with accuracy, sensitivity & specificity metrics.

Administrator

University of Surrey

📅 Oct 2024 – Jan 2025   📍 Guildford

- Updated student records, took minutes, assessed logs in SITS & SharePoint.
- Helped safeguard students liaising complex cases with many teams.
- Updated compliance documentation & debated future strategies with various teams at weekly meetings.

CERTIFICATIONS

IBM Data Science (*Coursera*)
ID: QEIS82L7TMRE   🔗 verify

Meta Data Analyst (*Coursera*)
ID: NT62H4LEXLFR   🔗 verify

Advanced Statistics for Data Science (*The Johns Hopkins University*)
ID: VJ1H4UAET90X   🔗 verify

Advanced Network Security (*LearnQuest*)
ID: JEL0EV1SWJGD   🔗 verify

Generative AI for Healthcare Students and Professionals (*University of Glasgow*)
ID: 92L8U08X3N0W   🔗 verify

Google Cybersecurity (*Coursera*)
ID: 9NF32288VEYD   🔗 verify

IBM Generative AI for Cybersecurity Professionals (*Coursera*)
ID: B4UYVUJHZ7T1   🔗 verify

Mathematics for Machine Learning (*Imperial College London*)

Google UX design (*Coursera*)
ID: 0PQKNFBORI2W   🔗 verify

IBM Deep Learning with PyTorch, Keras and Tensorflow (*Coursera*)

Advanced Machine Learning on Google Cloud (*Coursera*)

IBM Business Intelligence (BI) Analyst (*Coursera*)

IBM AI Developer (*Coursera*)

IBM RAG and Agentic AI (*Coursera*)

Machine Learning for Trading (*Google Cloud | New York Institute of Finance*)

BSc Mathematics with Economics (Upper Second Class)

Loughborough University

📅 Oct 2020 – Jul 2023

84% Stochastic Methods in Finance

90% Mathematical Methods

95% Applied Statistics

94% Computational Methods in Finance

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Key Project: Cardiac Image Segmentation

- Statistical learning pipelines were produced in RStudio allowing cardiac images to be segmented with a high level of accuracy.
- Logistic regression, random forest & clustering were some of the techniques tested to determine the best approach for segmentation.