Sebastian Lynch

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Congleton & Loughborough

Profile

- Postgraduate Data Science student, with programming, problem-solving, and teamwork experience. Keen and fast learner with a strong mathematical background. Looking for a role to build on current technical and professional skills in a challenging, industry-related environment.

Education

- **MSc Data Science**, Loughborough University — Predicted Distinction. 2024 — 2025
  Thesis: *Stock Market Prediction: Comparing Statistical, AI, and Graph-Based Models*.
  Achieved over 80% in 7/8 modules, including: Data Governance & Ethics, Statistical Methods, Programming, AI & Applied Machine Learning, and Big Data Analytics & Visualisation.
- **BSc Mathematics**, Loughborough University — First Class Honours. 2021 — 2024
  Thesis: *Hopfield Neural Networks* — Winner of Loughborough's BSc Mathematics Project Prize.
- **A-Levels**, Congleton Sixth Form College — A*, A*, A. 2019 — 2021
  Mathematics, Physics, Further Mathematics.
- **GCSEs**, Congleton High School — 11 GCSEs (9 – 6) including Maths and English. 2019

Publications

- **Peer Reviewed Article**, *Hysteresis in Neuron Models with Adapting Feedback Synapses*. 2025
  Research stemming from independent work during my final year mathematics project, which explored related dynamics but exceeded the scope of my thesis.

  Lynch ST, Lynch S. Hysteresis in neuron models with adapting feedback synapses. AppliedMath. 2025; 5(2):70. doi.org/10.3390/appliedmath5020070
- **Undergraduate Thesis**, *Hopfield Neural Networks*. Loughborough University. 2024
  Well-received thesis recommended for publication by my supervisor due to its originality and clarity.

  Lynch, Sebastian (2025). Continuous Hopfield neural networks with adaptive synaptic connections. Figshare. Thesis. doi.org/10.6084/m9.figshare.29119403.v1

Work and Enterprise

- **Online Experience Programmes via The Forage** Completed virtual work experience courses simulating tasks from leading companies, including data analysis, programming, and business decision-making scenarios. 2024 — …
- **Pub Staff** Worked regular part-time shifts alongside studies in a fast-paced hospitality environment, serving customers and assisting in the kitchen. 2023
- **Online Virtual Item Selling** Generated over £2,000 in profit by trading virtual items in the video game Rocket League, starting from an initial £10 investment; built a high-value inventory through strategic market analysis and in-game trading, simulating simplified stock market principles. 2019 — 2022
- **Resale Business** Built and ran a profitable business (aged 13–18), sourcing and selling Nike and Adidas stock with over £35,000 in sales; managed inventory, pricing, and tax compliance using spreadsheets. 2016 — 2021

Skills

- **Research**: BSc Mathematics Project: Simulated an 81-neuron Hopfield model and produced a novel investigation into the pattern recognition capabilities.

  Published a journal paper on hysteresis in continuous and discrete neuron models with adaptive feedback synapses.
- **Strengths**: Exceptional logical thinking and problem-solving skills, developed and utilised through my BSc in Mathematics. Experienced in technical writing and producing clear, well-structured reports, demonstrated in both my award-winning final-year mathematics project and my highly graded MSc Data Science courseworks.
- **Teamwork**: Collaborated in a group of five on a second-year project involving research, presentation, and report writing on the logistic map, demonstrating effective teamwork and coordination. Also developed strong teamwork skills while coordinating closely with colleagues and kitchen staff during my time working at the pub.
- **Communication**: Strong interpersonal and communication skills developed through customer-facing work in a busy pub environment and collaborative projects with peers during lab sessions throughout my studies.
- **Learning**: Highly motivated and quick to grasp new concepts, with a strong enthusiasm for continuous learning and tackling complex challenges. Proven ability to acquire new technical skills and adapt to unfamiliar tools or frameworks, particularly in data science and programming contexts.
- **AI**: Excellent understanding of Artificial Intelligence and Large Language Models, including how they function and how to apply them effectively. Experienced in utilising AI tools to automate workflows, enhance productivity, and solve practical problems in data analysis and programming contexts.
- **Other**: Three years of driving experience, clean license. Languages: English (native), Spanish (basic).

Technical Proficiencies

- **Python**: Experienced with modules such as `Pandas` and `TensorFlow`, working in `Jupyter Notebook` and `Google Colab`, and connecting to databases using `sqlite3`.
- **R**: Strong understanding; proficient with packages such as `ggplot2` and `tidyverse` in `RStudio`.
- **MATLAB**: Used during undergraduate studies to solve mathematical problems, particularly for my final year project.
- **LaTeX**: Extensive experience using LaTeX via Overleaf for academic writing and technical documents. Used for two published academic papers, CV, and numerous coursework reports during my MSc, demonstrating proficiency in professional formatting, typesetting, and document structuring.
- **Other**: Excel, PowerPoint, Tableau, GitHub, and Orange Data Mining.

Interests & Achievements

- **IMA**: Student member of the Institute of Mathematics and its Applications. I have a passion for mathematics and experience of research.
- **Hobbies**: Indoor climbing and bouldering (weekly), chess, swimming, table tennis, and video games.
- **Interests**: I enjoy watching science and engineering documentaries, football and Formula 1.
- **Achievements**: Top 5000 (0.05% of players) in Fantasy Premier League last season.
- Achieved Grandmaster rank online in the strategy board game Risk, demonstrating strategic thinking and long-term planning skills.

References available on request.