# Seymour Lopez

MPhil, MRes, MSc, BEng

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## Education:

**PhD: Machine learning in medical imaging, University College London Nov 2018-Dec 2023**

- Developed and designed pipelines for cleaning, visualisation and preprocessing large datasets, using Python libraries such as Pandas, Polars, Matplotlib, resulting in a 30% improvement in data quality and a 50% reduction in processing time.
- Designed a LASSO model as a feature reduction tool in order to identify brain regions responsible for facial asymmetry in patients with epilepsy, serving as a new supplementary tool for diagnosing type of epilepsy.
- Developed a disease progression model using a Bayesian framework and features from T1W imaging to distinguish treatment responses in patients with epilepsy, resulting in an 60% accuracy rate.
- Implemented a clustering algorithm that determines the epilepsy subtype based on their disease progression, using a combination of T1W and DTI data which uncovered two novel subtypes.
- Experienced in tuning hyperparameters in predictive, clustering, and classification algorithms, such as linear or logistic regression, decision trees, and SVMs, resulting in an average 10% increase in model performance.
- Designed deep learning algorithms such as convolution neural networks, diffusion models and GANs using Tensorflow and Pytorch libraries for image classification, image generation and prediction of histology colour from grey-scale images.
- Proficient in SQL and data querying for large datasets, allowing for efficient data retrieval and analysis.

**MRes: Biomedical Science, University of Glasgow Sept 2017-Aug 2018.**

- Investigated changes in the HOXA9 gene expression in Leukaemic cells using RNA sequencing and quantitative PCR, revealing a potential target for therapy.
- Analysed the effects of palmitoylation in cardiac cells using Western blotting, providing insights of their ion channels.

**MSc: Biomedical Engineering, University of Strathclyde Sept 2015-Aug 2016.**

- Researched and analysed the requirements for CE markings and regulations for deploying medical devices on the market, resulting in a report that was used to inform product development.
- Designed and developed a virtual reality application to teach eye surgery to ophthalmologists, using C# in Unity3D, which was used in a pilot study with medical students.

**BEng: Electronics and Telecommunications, University of Mumbai June 2008-May 2012.**

- Designed and developed a wireless ECG monitoring system using ZigBee technology that enabled real-time central monitoring of patient data, improving safety and reducing the risk of errors.
- Programmed microcontrollers using C++, Java, and assembly language to control sensor systems and signal processing algorithms.

**GitHub Link:** https://github.com/Seymour22

## Work Experience:

**Customer Services, Scottish Power, Kura, Glasgow Mar-Aug 2017**

- Managed meter readings and billing updates for over 100 customers weekly, resulting in a 25% decrease in billing errors.
- Successfully promoted smart meter installations to customers, resulting in a 35% increase in installations and reduced manual meter readings.
- Advised potential new customers on the best tariffs based on their usage and needs, resulting in a 20% increase in new customer sign-ups.
- Demonstrated excellent communication skills by explaining the benefits of smart meters and tariffs to customers and resolving their queries.

**KnowHow Engineer, PC World, London Jun 2013-Aug 2015 & (Part time) Glasgow Feb-Aug 2017**

- Diagnosed and repaired an average of 20 electronic devices per day, achieving a customer satisfaction rate of 90%.
- Communicated progress with customers and liaised with colleagues to ensure timely and efficient repairs.
- Documented all repairs and data recovery on computers, ensuring accuracy and compliance with data protection regulations.

## Skills:

Machine learning, deep learning, Python, TensorFlow, PyTorch, OpenCV, SQL