

Simon Ellershaw

BSc, MSc, MRes

Contact: simon.ellershaw.20@ucl.ac.uk   

Education

University College London - PhD Candidate AI-Enabled Healthcare (MRes Avg Mark 79%) 2020-Present

- **Fully funded** place at UCL's UKRI Centre of Doctoral Training in AI-Enabled Healthcare Systems
- **Scaling auto-regressive disease prediction model** to millions of healthcare records and billions of parameters
- Developed and evaluated **LLM**-based systems to reduce clinical administrative workload
- Implemented **vision transformers** for explainable medical imaging diagnosis
- Awarded PhD placement at **Turing Institute** (UK's National institute for data science and AI)
- Completed advanced modules, including **deep learning**, **computer vision** and **natural language processing**

Imperial College London - MSc Computing Science, Distinction (Avg Mark 83%) 2019-2020

- Awarded a distinction for thesis on '3D Infant **Pose Estimation** using Transfer Learning' [[Github](#)]
- Awarded **best group project** for developing a gamified football penalty app using **augmented reality** and **computer vision**. The R&D from the project went on to be integrated into a **commercially released app**
- Achieved first-class attainment in all modules including **algorithms**, **computer architecture** and **databases**
- Extensive training in programming languages including **Python**, **C++**, **Java** and **Swift**

Durham University - BSc Hons Natural Sciences, 1st Class (Avg Mark 76%) 2016-2019

- Studied advanced concepts in Computer Science, Physics and Biochemistry
- Delivered high-quality scientific **reports**, **presentations** and **academic literature reviews**

The King's School Chester 2009-2016

- A Level: Physics (A*), Biology (A*), Chemistry (A*), Maths (A), GCSE: 10 (8 A*, 2 A)

Industry Experience

Parexel AI Labs- Natural Language Processing Engineer, San Francisco Sep 2021-Present

A 12-month internship awarded as 1 of 8 participants on the prestigious **Silicon Valley Internship Programme (SVIP)**. SVIP aims to expose leading computer science graduates from around the world to the unique Silicon Valley culture. This led to a position working at one of the world's largest clinical trials companies, Parexel.

- Member of an AI group developing products to transform the clinical trials process of drugs. Led delivery of solutions in domains such as pharmacovigilance and quality assurance
- Contributed to a state-of-the-art NLP stack, including iterations to the **transformers** and **LLM** implementations
- Trained, evaluated and deployed **AI models into production** in collaboration with non-technical stakeholders
- Lead collaborator with **Stanford** and **University Ghent** to develop a public pharmacovigilance dataset [[arxiv](#)]

Metaswitch- Software Developer Internship, London July 2019-Sept 2019

8-week technology internship at a market-leading telecoms company based in the Mobile Voicemail team developing a new voicemail solution for large telecom clients such as AT&T

- Designed solutions based on cloud-native technologies including **Docker**
- '**Strong communication skills**', '**an admirable inquisitive streak**' and '**openness to feedback**' were highlighted as strengths in the leaving review process, which culminated in a graduate job offer

Motor Design Ltd- Software Developer Internship, Wrexham July 2018-Sept 2018

12-week software development internship at a rapidly expanding market-leading technology firm

- **Led the development** of an automated reporting tool to summarise the output of complex engineering models
- **Presented** the work to the company, including President and CEO, at a technical seminar

Hobbies

- **Surfing, Swimming and Water Polo** Represented Durham and Imperial University at a national level
- **Travelling** I have a passion for exploring the world self-organising trips to Asia, Europe and the USA

Publications

Papers

- “Automated Generation of Hospital Discharge Summaries using Clinical Guidelines and Large Language Models”, AAAI 2024 Spring Symposium on Clinical Foundation Models, 2023 [[Paper](#)][[Code](#)]
- “BioDEX: Large-Scale Biomedical Adverse Drug Event Extraction for Real-World Pharmacovigilance”, Accepted EMNLP Proceeding, 2023 [[Paper](#)]
- “A new meaning for NLP – the trials and tribulations of natural language processing with GPT-3 in ophthalmology”, British Journal of Ophthalmology, 2021 [[Paper](#)]
- “Unsupervised Human Pose Estimation through Transforming Shape Templates”, CVPR, 2021 [[Website](#)]

Extended Abstracts

- “3D Infant Pose Estimation Using Transfer Learning”, Medical Imaging meets NeurIPS workshop, 2020 [[Abstract](#)][[Oral Presentation](#)][[Code](#)]. Acceptance rate for orals 14.5%

Posters

- “Grounding Large Language Models with Clinical Knowledge using Information Retrieval”, Healtac, 2023
- “Using Vision Transformers to Automate the Diagnosis of Diabetic Retinopathy”, UCL AI Enabled Healthcare Annual Symposium, 2021 [[Poster](#)]. Awarded Best Poster Prize