Education
Cambridge University, Undergraduate (2022-2025)
- Computer Science student at Trinity College, Cambridge
- High first class in first-year exams

Trinity School (2014-2022)
- 4 A*s at A-level (maths, further maths, computer science, physics)

Qualifications
- Cert 5 Freelance AI Developer (PeoplePerHour)
- Rising Talent Freelance AI Developer (Upwork)
- Amazon Web Services Certified Machine Learning - Speciality

Olympiad Success
- Selected for British team in the International Physics Olympiad
- Finalist for International Olympiad in Informatics team selection
- British Maths Olympiad top 25 in Round 1 and Round 2

Professional Experience
Research Intern, InstaDeep (2023)
- Research involved finding efficient and sensible packing configurations for the bin-packing problem in industrial settings, accounting for real-world constraints
- Developed an algorithm that improved performance and is integrated into main codebase
- Full software engineering pipeline with DevOps and MLOps
- International team working remotely, on-site and in global offices

AI, Software and Web Developer, PeoplePerHour (2020 - 2023)
- 114+ 5-star reviews from 104+ completed projects with 53+ clients
- Profile available at https://pph.me/george-ogden

News Broadcast (2023)
- Created a pipeline to convert an audio recording into a synthetic new broadcast
- Developed techniques to create incredibly realistic videos by combining different stages of the process to cleanup imperfections and errors and stop them compounding
- Deployed to AWS for a client with limited technical knowledge

Machine Learning Price Prediction (2022)
- Implemented SOTA algorithms to make profitable predictions on cryptocurrency prices
- Project integrated into Binance Testnet environment to evaluate best strategies
- Detailed analyses of data to explain methods to client, as well as analysis of results

Vein Segmentation (2022)
- Trained custom model to detect veins in tobacco plants, achieving 95%+ accuracy
- Created documentation and infrastructure around the project for client to use with ease

Postcode Optimisation (2022)
- Wrote AI algorithm to minimise number of API requests and maximise returned data
- Strong communication with client to manage ratio of requests and returned data for task
- Implemented OCR tools for price extraction from photographs
- Analysed metadata from images and used API to identify postcode where image was taken

SolarStream (2020-2021)
- Trained a custom model to identify solar panels using existing drone footage
- Wrote custom algorithm to work with the model and group panels for easy identification
- Code ran on ARM hardware as a Docker container with GPU utilisation and external camera

Additional Research Projects

Advancements in PPO (2023)
- Improved efficiency and performance of Proximal Policy Optimisation algorithm
- Investigated tradeoffs between using different recurrent architectures in agent
- Full article available at https://go281.user.srcf.net/blog/ppo

Successor Heads: Recurring, Interpretable Attention Heads In The Wild (2023)
- Collaboration to analyse behaviour of successor heads in large language models
- Accepted at NeurIPS 2023 ATTRIB and SoLaR Workshops

Imperfect Information Games (2023)
- Read important papers on counterfactual regret minimisation (Lactot, Brown, Bowling)
- Found and understood mathematical proofs of important results (Gordon, Zinkevich)
- Implemented code for algorithms and solved a number of small games (found ε-equilibrium)

Residual Streams (2023)
- Analysed behaviour of residual streams in ResNet and transformer-based models
- Investigated the presence of an aligned basis in residual streams
- Full article available at https://go281.user.srcf.net/blog/residual-streams/

Classical Reinforcement Learning (2022)
- Watched online lecture series by notable DeepMind researchers (Van Hasselt, Silver, Mnih)
- Implemented various RL algorithms from scratch in Python (DQN, DynaQ+, TD-λ learning)
- Created generic RL framework to apply to various MuJoCo environments

MuseGAN (2021)
- Collaborated with PhD student on MuseGAN, which uses generative AI to create music
- Project is now the backbone of AWS' DeepComposer service

Additional Interests
- President of Cambridge University AI Society
- Member of South London Harriers running club
- Part of The Archimedeans (Cambridge University Mathematical Society)
- Webmaster for The Send a Child to Hucklow Fund and Cambridge running club