

Education

2016 - 2020	Trinity College, University of Cambridge Part I Mathematics Part II Engineering (1st) <i>Relevant courses: Linear Algebra, Markov Chains, Numerical Analysis, Optimisation, Statistical Signal Processing, Probabilistic Machine Learning, Computational Neuroscience, Deep Learning & Structured Data</i>	BA(hons) MEng
2009 - 2016	Reading School STEP STEP II (S), STEP III (1), for admission into the Cambridge Mathematical Tripos A Level 3 A*s (Mathematics, Further Mathematics, Physics), 2 As (Chemistry, History) ACT Composite 35/36 (English 34, Mathematics 35, Reading 35, Science 36) GCSE 11 A*s, 2 As (inc. FSMQ Additional Mathematics)	

Experience

Summer 2019 10 weeks <i>Corporate</i>	Goldman Sachs, London Developed a full software stack for flow vis and analysis of a distributed transaction processing system <ul style="list-style-type: none"> Proposed and deployed a stack consisting of Java/Spring components with a JavaScript/React UI Engaged in extensive networking activities, collaborating with MDs and global team members Reached out to the Eqs Structured Products Strat Desk and worked on small quant projects 	Summer Analyst
Summer 2018 3 months <i>Research</i>	PlayFusion, Cambridge Attempted to make a neural network based AI capable of teaching itself to play a newly developed DCCG <ul style="list-style-type: none"> Researched and adapted algorithms/structures based on DeepMind's AlphaGo Zero (Nature 2017) Designed a bespoke distributed computing infrastructure using TCP/IP/Python on AWS EC2 Implemented a basic two-headed neural network to drive self-learning using Keras/Tensorflow 	Intern Developer
Summer 2017 2 months <i>Startup</i>	WaterScope, Cambridge Worked on improving a 3D-printed water-testing microscope prototype for use in developing countries <ul style="list-style-type: none"> Modelled and 3D-printed a screw drive actuator to connect existing mechanisms to a servo motor Improvised a hybrid golden section/exhaustive search algorithm to suit the target application Started a spin-off image processing project (CFU Tracker for same-day water testing) 	Contractor

Projects

2019 - present	Feature Selection for Counterfactual Generation in the ITE Estimation Problem <ul style="list-style-type: none"> Masters Project on medical machine learning, supervised by Prof. Mihaela van der Schaar Using GANs to generate counterfactuals and actor-critic-based RL to explore the feature space 	
2017 - present	CFU Tracker for same-day water testing in developing countries <ul style="list-style-type: none"> Combining traditional computer vision techniques with time-series analysis and machine learning Multidisciplinary collaboration involving microbiology, engineering and a field trip to New Delhi 	
2016 - 2020	Engineering Tripos Reports & Mathematical Tripos CATAM <ul style="list-style-type: none"> Gaussian Processes Probabilistic Ranking Public Key Cryptography Ordinary Differential Equations Bayesian Logistic Regression Coding in the Visual Cortex The Restricted Three-Body Problem Medical Imaging & 3D Computer Graphics 	
2015 - 2016	Quadcopter Control Theory <ul style="list-style-type: none"> Built a custom rig using a Mecano set, borrowed quadcopter parts and an I2C accel/gyro unit Implemented PID control using IMU sensor data and investigated changes in parameter settings 	

Leadership and Achievements

- Trinity College Basketball Captain (2018-19)
- First and Third Lower Boats' Captain (2017-18)
- Co-produced, composed and led a musical programme consisting of an orchestra, choir, small groups and soloists for a school competition (2016)
- School Prefect & House Vice-Captain (2015-16)
- Sat Round 2 of the British Mathematical Olympiad and attended the Olympiad Initial Training Camp at The Queen's College, Oxford, by invitation (2013-14)
- Competed in the Gibraltar International Junior Chess Festival as part of the English National Chess Junior Squad (2012)