

## Education

2016 - 2020	<b>Trinity College, University of Cambridge</b> Part I Mathematics (2:1) Part II Engineering (1st) <i>Relevant courses: Linear Algebra, Markov Chains, Numerical Analysis, Optimisation, Statistical Signal Processing, Probabilistic Machine Learning, Computational Neuroscience, Deep Learning &amp; Structured Data</i>	<b>BA(hons) MEng</b>
2009 - 2016	GRE Verbal Reasoning 167/170, Quantitative Reasoning 170/170, Analytical Writing 4.5/6 <b>Reading School</b> STEP STEP II (S), STEP III (1), for admission into the Cambridge Mathematical Tripos A Level 3A* (Maths 100%, F Maths 99%, Physics 96%), 2A (Chemistry 88%, History 98% AS) ACT Composite 35/36 (English 34, Maths 35, Reading 35, Science 36), English/Writing 31 GCSE 11A*, 2A (inc. FSMQ Additional Mathematics)	

## Experience

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

## Projects

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

## 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)