

Alfred Wong

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Education

2016 - 2020	Trinity College, University of Cambridge 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 & Structured Data</i>	BA(hons) MEng
2009 - 2016	GRE Verbal Reasoning 167/170, Quantitative Reasoning 170/170, Analytical Writing 4.5/6 Reading School 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>	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 Java/Spring backend in tandem with a JavaScript/React frontend/UIEngaged in extensive networking activities, collaborating with MDs and global team membersReached 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 EC2Implemented 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 motorImprovised a hybrid golden section/exhaustive search algorithm to suit the target applicationStarted a spin-off image processing project (CFU Tracker for same-day water testing)	Contractor

Projects

2019 - present	Feature selection for individualised treatment effects <ul style="list-style-type: none">Masters Project on medical machine learning, supervised by Prof. Mihaela van der SchaarWorked on GANs, actor-critic RL, representation learning, causal inference
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 learningMultidisciplinary 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 ProcessesLatent Dirichlet AllocationProbabilistic RankingCoding in the Visual CortexPublic Key CryptographyThe Restricted Three-Body ProblemOrdinary Differential EquationsMedical Imaging & 3D Computer Graphics

Leadership and Achievements

- Trinity College Basketball Captain (2018-19)
- 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)
- First and Third Lower Boats' Captain (2017-18)
- Competed in the Gibraltar International Junior Chess Festival as part of the English National Chess Junior Squad (2012)
- 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)