Alfred Wong

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Education

2016 - 2020 | **Trinity College, University of Cambridge** **1st Class, BA MEng**
Part I Mathematics - Part II Engineering

2014 - 2020 | **Other Qualifications**

STEP	STEP II (S), STEP III (1)	GRE	Verbal 167/170, Quant 170/170, Writing 4.5/6
A Level	3A* (F Maths, Maths, Physics)	ACT	Composite 35/36, English/Writing 31/36
	2A (Chemistry, History)	GCSE	11A*, 2A

Experience

Summer 2019 | **Goldman Sachs** **London**
Finance
Developed a full stack system and contributed to some quant analyst work
- Used Java/Spring with a time-series SQL-like DB to collect info from data sources (JMX, DB2)
- Served a JS/React graphical frontend displaying time-series analyses and routing flow indicators
- Worked on various quant projects on the side for the Equities Structured Products Strat Desk

Summer 2018 | **PlayFusion** **Cambridge**
Research
Implemented an asynchronous, probabilistic tree search based AI with a distributed self-play setup
- Adapted AlphaZero's APV-MCTS method, applying concurrency-oriented tweaks (Unity/C#)
- Built and deployed an arbitrarily scaling self-play infrastructure on AWS with TCP/IP (Python)
- Ran experiments with a basic two-headed neural network as a placeholder (Keras/Tensorflow)

Summer 2017 | **WaterScope** **Cambridge**
Non-profit
Worked on a 3D-printed water-testing microscope for use in developing countries
- Modelled and printed various 3D components to work in conjuction with an RPi and Arduino
- Parallelised image convolutions within a golden-section search to optimise autofocus performance

Projects

2019 - 2020 | **Balanced Representation Learning and Feature Disentanglement for Medical ML**
- Masters dissertation with a focus on individualised healthcare and causal graph inference
- Tackling the problem of performing feature selection with consideration for confounding biases
- Worked with GANs, actor-critic RL and representation learning, using Pandas/Keras in Python

2019 - 2020 | **Low-level, High-framerate Tetris Implementation on a KL03 ARM Cortex-M0**
- Coded in C, driving a $96 \times 64 \times 16$bit colour display at 60 FPS (720KB/s) with 2KB SRAM

2017 - 2018 | **CFU Tracker for Automated Intra-day Water Testing**
- Multidisciplinary collab with WaterScope involving microbiology, engineering and a field trip
- Used HSV spectrum analysis, computer vision and time-series techniques to improve segmentation

Leadership and Achievements

- Trinity College Basketball Captain, led 3 sessions a week, promoted to Division 1 by end of year
- First and Third Lower Boats' Captain, coached 100+ novices as a team of 7, fastest NW1 & NW3
- 1st Men's Novice VIII, 9/9 race wins, fastest novice crew across 2700m for the first time in 33 years
- Composed for and led an orchestra, choir, small groups and soloists for a school competition, as a team of 3
- School Symphony Orchestra, played as Concertmaster for Dvorak 9, Violin 2 leader for Beethoven 5
- School Prefect & House Vice-Captain, organised and participated in sports teams across all year groups
- Sat Round 2 of the British Mathematical Olympiad, invited to an Olympiad Training Camp at Oxford
- Represented the English National Junior Chess Squad on an international level in Gibraltar