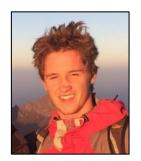
HARRY COPPOCK

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EDUCATION

Imperial College London, Artificial Intelligence (MSc)

Sept 2019 - Aug 2020

- Award: Distinction (82%) with Distinguished Individual Project
- **2019 course content:** Reinforcement learning, Introduction to Machine Learning, Mathematics for Machine learning (e.g. PCA, SVM, regression), Symbolic AI and Python programming.
- **2020 course content:** Natural Language Processing, Advanced Deep Learning, Machine Learning for Imaging, AI Ethics and Privacy, 3 month Software engineering group project and a 6 month Individual Research project.

The University of Manchester, Materials Science and Engineering (MEng)

2015-2019:

- 1st (84.1%) (top of the year every year through 4 year course)
- Specialised in **nanotechnology** (energy storage devices), **solid state physics** (solar cells and computer transistors), **composites** and **nanocomposites**

The University of Stanford in partnership with the deeplearning.ai, Artificial Intelligence:

2018-2019

- Neural Networks and Deep Learning (grade: 97.2%)
- Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization (97.6%)
- Structuring Machine Learning Projects(87.5%)

Queen Elizabeth's Hospital School, Bristol 2007-2014:

• A2: A*A*A AS: 4As GCSE: 8A*s 1A 1B

ACHIEVEMENTS

•	The Imperial College London's Distinguished Individual Project Prize for work on Vector Quantis	ed Variational
	Autoencoders for representation learning.	2020

- The University of Manchester's **Outstanding Academic Achievement** award made to 0.5% of the graduating cohort for students who have demonstrated exceptional achievement in their undergraduate academic career.2019
- The School of Materials' "Faculties Prize for Highest Performance in Fourth Year"

2019

• "The Tin Plate and Rolls Royce Workers Prize" for top performance in third year

2018

• "The Robert Warner Scholarship": A national award by the Worshipful Company of Founders of the City of London, decided by competitive application, screened for performance and chosen through an interview process

		2017
•	The School of Materials' "Faculties Prize for Highest Performance in Second Year"	2017
•	The School of Materials' "Faculties Prize for Highest Performance in First Year"	2016
•	"The British Steel Prize": for highest marks in Metallurgy	2016
•	School of Materials' Scholarship for "Outstanding Home and Overseas Application"	2015
•	The Captain's Prize: for my service as Head Boy at QEH school	2014
•	Commendation for high performance at A level	2014
•	Commendation for high performance at GCSE	

ROLES OF RESPONSIBILITY:

- The PhD Equality and Diversity Representative for the computing department at Imperial. In this role I act as an Ally, working to ensure that all voices are heard in the department. 2020-current
- Teaching Scholar at Imperial College London. Course Support Lead for the following Master level modules: Deep Learning, Ethics Privacy and Law in AI, Python Programming and Introduction to Machine Learning. In this role I assist lecturers in writing and marking coursework and tutorials along with student project supervision.2020-current
- **Teacher's Assistant** at UoM for a 3rd year module: Modelling and Data Tools Analysis in Python
- **Elected Year Representative** (2nd, 3rd and 4th year): acted as link between students and supervisors 2016-2019
- Nominated for "Student Rep of the Year" at The University of Manchester

2017

- PASS Leader: Role awarded by tutors: I took a weekly class of 25 year-below students to help them with problems and challenges in their studies. The aim was to stimulate academic discussion and debate 2017-2019
- Elected Head Boy at QEH School: This role developed my presentation and administrative skills and proved my capacity for hard work and ability to lead. 2013-2014
- Pack Leader of the First XV at QEH: 2013-2014
- School Council Year Representative: 7 years representing the interests of pupils 2007-2014
- Peer Supporter: Mentored a group of year 7 boys. 2013-2014

COMPUTER SCIENCE SKILLS:

- Language: Python (Level: Advanced)
- Experience in the areas of:
 - Machine Learning Techniques: Deep Neural Networks (NNs), Recurrent NNs, Generative Adversarial Networks, Variational Autoencoders, Transformers, Convolutional NNs, Autoregressive models, Random Forests, Gaussian Mixture Models, Graph Neural Networks, and Evolutionary Methods.
 - Machine Learning Libraries: PyTorch, TensorFlow, Keras, Scikit-learn
 - o General Libraries: NumPy, Pandas, Json, matplotlib and many more
 - Computer Science techniques for Science: Materials Simulation. Data Analysis and Visualisation

Projects:

- [First author paper] End-2-End COVID-19 Detection from Breath & Cough Audio. Developed a novel ML model for COVID-19 classification from crowd sourced breath and cough audio clips recorded on every day devices. (paper in review at BMJ innovations)
- Developed novel regularisation technique for state of the art Vector Quantised Variational Autoencoder which yielded superior representations. (Master's Thesis, Imperial College London) awarded The Distinguished Project prize.
- 3 month group project using **Deep Reinforcement Learning** in medical imaging for landmark detection and automatic view planning in 3D MRI scanning (team of 6)
- As Materials Science Project Manager, simulated the electrical conductivity of graphene aerogels
- As Materials Science Project Manager, created a Monte Carlo Simulation in Python to assess the impact of risks and tasks on productivity, with the aim of maximising project efficiency and avoiding failure

MATERIALS SCIENCE AND ENGINEERING EXPERIENCE:

- Recyclable and repairable carbon fibre, graphene reinforced vitrimer composites, Individual research project developed a novel composite which is uniquely fully recyclable and repairable. 2018- Feb 2019
- Graphene aerogels: Project Manager for a team of 5, investigating the effects of processing methods on the characteristics and multifunctional properties of graphene aerogels. First team to successfully produce graphene aerogels in Manchester, with team-mates and I going on to secure funding to set up a company, Nanoplexus, to commercialise it. 2018

WORK EXPERIENCE AND VOLUNTEERING

- Shepherd: Spent my summer months herding and milking sheep, making cheese, topping the fields for hay, sheep care (vaccinating and worming), manual labour and assisting with the general up-keep of the farm.
- Client Support Agent at Hargreaves Lansdown: During university holidays, I assisted clients, topped up their accounts, placed deals in shares, funds and ETFs and trained several new employees. Sept 2014 - April 2015
- Volunteered weekly at Southmead Hospital, Bristol: Assisted cardiac and respiratory patients and following training performed more complex tasks including ECGs and feeding patients Sept 2012 - July 2014
- NHS Organ Donation Campaigner: Organised a series of talks (by myself and a Transplant Surgeon) at sixthforms across Bristol, enabling students to sign up to the NHS Organ Donor Register. Sept 2012 - July 2014
- Independent travel to Arizona at age 15: Volunteered at a nature reserve. We were on call to remove venomous snakes from private property and return them safely to the wild. I also assisted undergraduates in the collection of scientific data, including the collection of Gila monster venom for medical applications. July 2012