Michael Southall

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An athletic and intellectually curious person, I am deeply interested in solving problems. My main athletic activities are university and county-level tennis, and road cycling. This has piqued my interest in nutrition, and its effect on athletic performance. My athletic interests also encouraged me to travel in Europe by bicycle, which gave me the opportunity to explore different cultures via both local people and fellow travelers.

The fascination for understanding different ways of life was developed by my childhood in Singapore, Hong Kong and the UK, and my travel experiences in South East Asia, China and Europe. I love to read books, particularly on economics, politics and the environment, which helps me understand how governments and businesses work, and the contribution of engineers to societal and environmental solutions. I enjoy playing Go (chess) in a competitive world-wide league, and this has also motivated my interest in machine-learning.

In both academic and professional environments, I thrive in leadership positions and relish opportunities that enable me to proactively gain experience from a diverse range of teammates in multi-disciplinary projects. Through my diverse upbringing and travel experiences, I firmly believe that I flourish in working with colleagues from difference backgrounds, where we can learn from each others' strengths and weaknesses collectively.

Academic Qualifications:

2019-2022 **University of Southampton**
BEng Electronic and Electrical Engineering
Relevant modules to-date: Programming, Advanced programming, Machine learning technologies (involving C, C++ and Python respectively)

2012-2017 **Lancing College, Sussex**

- **A Level** Mathematics(A*), Chinese(A), Further Mathematics(B), Economics(B)
- 12 **GCSEs**(10 A*s, 2 As)

Other Qualifications:

2017 Gold **Duke of Edinburgh** Award

2017 **STEM Gold Crest** Award
Working with engineering consultancy firm - **Ricardo Plc** (see below).

Work Experience:

2022 **IET Power Academy Scholarship holder – Western Power Distribution (WPD)**

- 2-month summer placement in Birmingham – a month in **Network Services** team and a month in **Primary System Design** team.

2021 **IET Power Academy Scholarship holder – Western Power Distribution (WPD)**

- 9 weeks' summer placement at UK's largest electricity distribution network operator, under Institution of Engineering and Technology's scholarship scheme.
- Conducted research in a team environment analysing network restoration strategies, leading to best practice and improvement recommendations.
- Attended a two-day Power Academy seminar, which involved conducting research on National Grid's Net-Zero strategy and provided an excellent opportunity to network with scholarship holders from a wide range of companies.

2017 (September-May; part-time during A Levels) **Ricardo Plc**. as mentioned above.

- Involved in developing a simplified model of a piston rig for analysing the movement of liquid when a piston oscillates.
- Designed and built a rig which held a transparent acrylic container with a smartphone; designed using CAD software, producing it with a laser-cutter.
- Report writing and presentation delivery were invaluable experiences.

2017 (September-November) Apple Café, Chichester

- Worked as a front of house waiter and cashier, to raise funds for travelling.

2016 (December-January) Shanghai Optical Essentials Co., Ltd. (part of **DofE** award requirement)

- Worked with head of marketing, and learnt the company's sourcing methods in Mainland China, and how it exports optical components to Europe.
- Refined the firm's Standard Operating Procedures Manual.
- Experienced working in China for the first time, which highlighted different working cultures and the technologies used to communicate with colleagues.

Software-specific projects:

- For my final year dissertation, it involved the use of genetic algorithms to enhance understanding of how to optimise the thicknesses and materials used in photonic radiator design.
- A well-known industrial application of photonic radiators is pioneered by a Stanford University spin-off firm called SkyCool Systems, which reduces electricity consumption in refrigeration and air conditioning systems.
- During my 3rd year's Machine Learning Technologies module, a classification machine learning model was developed to detect fake tweets with the use of Natural Language Processing.
- The performances of Multinomial Naïve Bayes (MNB), Support Vector Machine (SVM) and SVM with Stochastic Gradient Descent optimisation function model were compared via the use of confusion matrices, with the MNB model achieving the highest micro-F1 score of 0.866.
- Both Machine learning projects mentioned were done in Python.

Extra-curricular:

2016-2017 School Prefect and Peer Supporter

- Completed course on confidentiality, how to be approachable and appropriate listening and communication skills when dealing with students and difficult issues
- Raised awareness of mental health challenges and conducted surveys on common stress triggers faced by students during Anti-Bullying week.
- Held an active role in engaging with students, and was responsible to raise their concerns during the weekly Prefect meetings with Head of Pastoral care and Headmaster.

- **Read** extensively about economic, current affairs, social and environmental issues.
- Play **Go** (chess) at a 1 Kyu level, tying my interest in machine-learning algorithms which lead me to study specific machine-learning modules in year three.
- Passionate in a wide variety of sports, but especially **tennis** (LTA rating of 5.2 and Qualified Level 1 coach) and in **BUCS** (British University Collegiate) - **2nd** team captain at university.

Referee:

Professor Koushik Maharatna (Personal Academic Tutor)
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Academic transcripts or any other information available on request.