Alfred Sydney Brown

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D.o.B: 01.06.1997
Dual-Nationality: UK/German
Status: Unmarried, no children

Key Skills

- Hard problem solving; e.g. came top of my year in numerous advanced mathematics courses at the university of Bristol and wrote a highly-regarded thesis on biologically plausible neural networks applied to tactile robotics.
- Computing: MatLab (4 yrs.), Python (4 yrs.), Java (1 yr.), C (1 yr.), Html (3 mos.), Javascript (3 mos.), Css (3 mos.), Excel (2 yrs.), LaTeX (4 yrs.), and CAD (2 yrs.).
  - In Python I have experience working with NumPy, Matplotlib, SciPy, Shapely, OpenCV, Pandas, PyTorch, Folium and GeoPandas. I also have experience using JSON and GeoJSON for map-api's on websites.
- Four years of experience refining large data sets and analysing them using statistical methods and machine learning.
- Effective communicator, adaptable and well-organised.
- Native speaker in English and German.

Education and Qualifications

University of Bristol, 2016 - 2020
Engineering Mathematics Master's Degree (MEng)
Top of class 2020. Master of Engineering With First Class Honours.

Nelson-Mandela State International School Berlin, 2002 - 2015
Diploma of the International Baccalaureate
Mittlerer Schulabschluss

Work and Volunteer Experience

March to June 2020 OHIOH: During the Corona pandemic of 2020, I joined the European Hackathon, and helped a team (OHIOH) develop an app that aimed to mitigate the spread of the virus while also maintaining people's privacy. Our team worked with the founder of Ubuntu, Dan Kohn, and other institutions, such as MIT and IBM.

July 2019 - Bristol Robotics Laboratory (BRL): The BRL is a high-tech research facility affiliated with the University of Bristol. There I worked as a research intern, helping to design an anthropomorphic finger tip that can be used as a biomimetic tactile sensor.

July 2018 - Beijing Institute of Technology: I spent one month in Beijing learning Mandarin and gaining hands-on experience in assembly and disassembly of car engines, transmissions and differentials. Additionally, I attended an advanced lecture course on current technology in intelligent and electric vehicles and smart cities.

Sept 2014 - Atelier Ten (Engineering and Environmental Design consultants): Shadowed a mechanical engineer and an environmental designer, getting my first insight into industrial working life.

Additional Information

- Play lead guitar in an alternative soul and r&b band called *Prismala*. Recently, I designed and built our website www.weareprismala.com.
- Represented the University of Bristol with its 1st's Touch Rugby team. Also an active soccer player, jogger and table-tennis player.
- School President in the year 2014. Organised and led meetings with students and staff and regularly spoke in front of the entire school.

List of Modules Completed and Marks

Highlighted are the ones perhaps most relevant to my application.

Year 1
Fluids 1, 72%
Electronics, 80%
Eng. Physics, 78%
Python, 75%
C and Java, 71%
Data Modelling 1, 68%
Eng. Mathematics 1, 71%
Discrete Mathematics 1, 95%

Year 2
Professional Engineering, 70%
Symbols, Patterns, Signals, 81%
Control 2, 89%
Engineering Physics 2, 97%
Engineering Mathematics 2, 97%
Discrete Mathematics 2, 90%
Matlab, 87%
Mathematical and Data Modelling 2, 69%
Thermodynamics, 80%

Year 3
Optimisation Theory and Applications, 90%
Nonlinear Dynamics and Chaos, 95%
Mathematical and Data Modelling 3, 74%
Machine Learning, 82%
Computational Neuroscience, 79%
Intro to Artificial Intelligence, 89%
Continuum Mathematics, 86%
Heat Transfer, 93%

Year 4
Applied Deep Learning, 74%
Advanced Nonlinear Dynamics and Chaos, 85%
Delay and Stochastic Equations in Engineering and Biology, 88%
Ultrasonic Non-Destructive Testing, 66%
Dynamics of Networks, 86%*
Transport and Mobility Modelling, 81%*
Technical Project (Thesis), 77%*
Control Theory, 83%*
Power Generation for the 22nd Century, 65%*

*Taken as online exams during the Covid-19 pandemic of 2020.

Other Projects

- Year 1: Minimising telephone cable length to connect N hubs in N towns to one main hub; Using Markov Chains to predict the outcome of football matches; Modelling the Population Growth of the UK; Computing the total CO_2 intake of a 10 hectare forest in Britain and the forest area needed to capture all the CO_2 emitted by the UK.
- Year 2: An investigation into the correlations found in the EEG data of Epileptic and Alzheimer's Disease patients; Transient response improvement through controller design for an Elevator; Identifying the parameters of a synthetic gene Network; A network of similarities and differences between nations; A report on clearing Henderson Island of its plastic; A control method for a Bermuda-rigged sailing boat;
- Year 3: A Bayesian Network to predict air pollution levels in the city of Bristol; A safe parking lock system for automatic transmission vehicles;
- Year 4: Ultrasonic Non-Destructive Testing methods applied to a pressure vessel; **Master Thesis**: Dendritic Neural Networks Applied to Robotic Touch - A Bio-Inspired System for Robotic Contour Following.