Theo Brown

EDUCATION

UNIVERSITY OF CAMBRIDGE   MEng Information Engineering

3rd & 4th year: Probabilistic inference & machine learning, systems & control, signal processing & information theory

1st & 2nd year: General Engineering

College prize: 2nd year exam results

IET Diamond Charles Belling Scholar: one of two recipients of highest scholarship offered by the IET

PLASMA SUMMER SCHOOL   Culham Centre for Fusion Energy, Oxfordshire

World-leading intensive course on the foundations of plasma physics for nuclear fusion, targeted at plasma physics postgrads

COLYTON GRAMMAR SCHOOL   Colyford, Devon

A-levels (5 A*): Maths, Further Maths, Physics, French, General Studies

Additional qualifications: EPQ (A*), AS English Literature (A), AS Critical Thinking (A), GCSEs (12 A*)

Arkwright Engineering scholarship

RESEARCH

REINFORCEMENT LEARNING FOR PLASMA CONTROL   Master's project & internship, UKAEA

Investigating Bayesian optimisation and reinforcement learning for controlling plasmas in nuclear fusion reactors. Instigated AI for nuclear fusion collaboration between University of Cambridge & UKAEA. Familiarity with high performance computing, scalable reinforcement learning for continuous control, and state-of-the-art plasma modelling codes.

EMPLOYMENT

SOFTWARE & UI DEVELOPER   Internship, University of Cambridge

10 weeks in a team of two developing a vibration analysis toolkit in Python with Qt GUI. Followed best-practice software engineering approaches. Worked with clients to build specification; implemented interactive data logging, visualisation, & analysis.

TUTOR   Young Direction Tutoring Shanghai & freelance

5 students: maths and physics preparation for GCSEs/entrance exams, fundamentals of computer science & programming

PROJECTS

OBJECT-TRACKING QUADCOPTER   C++, computer vision, control

Automated drone using colour segmentation to detect & follow objects. PID control & Kalman filtering IMU from scratch. Awarded regional prize in the UK Young Engineer of the Year competition.

ESPORTS TOURNAMENT SERVER APP   Python, PostgreSQL, Docker, Redis, CI/CD, FastAPI

Containerised microservices application to run university gaming tournaments: dynamically sets up servers, tracks player and result data, controlled with a REST API + Discord bot. Continuous deployment with GitHub Actions.

VICE PRESIDENT, CAMBRIDGE CHRISTIAN UNION

Co-leadership of one of the largest university societies. Duties included management of 24 college Christian societies, acting as interface point with parent charity, organisation & chairing of 3 residential conferences. Successfully overhauled society programme to reflect changing student needs, working to achieve consensus & reconciliation from diverse, deeply-held beliefs.

SKILLS

Python • PyTorch • C/C++ • OpenCV • LaTeX • SQL • Bash • Linux sysadmin • Docker • HPC & SLURM • French