

ALEXANDER PONDAVEN

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[LinkedIn](#)

PROFILE

3rd year MEng computer engineering student with experience in computer vision and keen to do research in ML.

EDUCATION

Sept 2019 - Jun 2023 **MEng Electronic and Information Engineering** (Imperial College London)

- Year 2 Total: 77% - Achieved Dean's List (Top 10% in year), Year 1 Total: 73%
- Relevant modules: Mathematics (including Linear Algebra, Probability & Statistics) (84% and 70%), Discrete Maths (83%), Software Systems (77%), Machine Learning, Deep Learning

2017 – 2019 **International Baccalaureate Diploma** (Whitgift School)

- 43 out of 45 (Top 2% of all candidates)
- Higher: Mathematics, Physics, Chemistry (all 7/7) - Standard: Economics (7/7), English (6/7), French (7/7)

ONLINE COURSES

Machine Learning Stanford Coursera Course by Andrew Ng

August 2020

- Achieved 100% on quizzes and exercises in MATLAB based on machine learning fundamentals

EXPERIENCE

HUMANISING AUTONOMY

London, United Kingdom

Computer Vision Internship

April 2022 - present (6 months)

MATHWORKS

Cambridge, United Kingdom

Deep Learning Software Engineering Internship

June – October 2021 (3 months)

Joined the deep learning algorithms team working on the Deep Learning Toolbox in **MATLAB**

- Created a video classification example based on a research paper about FAST 3D convolution
- Manipulated HMDB51 video data with datastores and tuned hyperparameters to get 70% model accuracy
- Enhanced global pooling layers to enable new use cases and wrote unit tests in a large-scale test framework
- Improved layer performance by up to 40 times faster than the existing approach in only a few lines of code by carrying out an investigation using performance tests and organising a design review with different teams

PROJECTS

Inpainting of LANDSAT7 satellite images using meta-learning

November 2021 - present

Leading a team of 4 in a research project involving inpainting scanlines in satellite images using neural processes

- Carried out literature review, set up data pipeline, trained models, and plan to submit paper

Mars Rover – Computer Vision subsystem

May - June 2021

Created a Mars Rover in team of 6 that navigates its environment - worked on the object detection system

- Detected bounding boxes around 5 coloured ping pong balls to determine their relative position to the camera by programming an FPGA in **Verilog** to process pixels in parallel by developing pipelined algorithms

Music Genre Classification in Python

January 2021

Analysed and visualised music data with **NumPy** and **Matplotlib** to train classification models: [GitHub](#)

- Classified music into 10 genres with 90% accuracy by tuning models like CNNs with **TensorFlow**

SKILLS

- **Programming/Software:** Python, C++, C, MATLAB, Verilog
- **Tools:** NumPy, Matplotlib, scikit-learn, TensorFlow, PyTorch, Git, OpenCV

EXTRACURRICULAR

- **Unicode 20/21 Challenge by ShowCode** – Finished 3rd place (Team Imperial) out of over 80 universities
- **Gold Duke of Edinburgh Award (2017-2018)** – Developed new skills: Piano, Rowing, Maths tutoring
 - Completed a 5-day expedition in group of 5 in the GR20 route in Corsica through detailed route planning and resilience (2 weeks afterwards, completed 170 km Tour du Mont Blanc expedition in 5 days)
- **Interests** – Sumobot competition (built robot from scratch), Running, Taekwondo (red belt), Rowing

LANGUAGES

English (fluent), French (conversational), German (intermediate), Swedish (intermediate)