Luke Edgecombe

luke.edgecomb2@gmail.com | +44 7465 433217 | Edinburgh, UK
linkedin.com/in/luke-edgecombe333 | github.com/Luk446

About Me

Robotics and machine-learning engineer with a background in biomedical engineering. I am currently studying for an **MSc in Robotics with Industrial Application** at Heriot-Watt University (expected 2027), focusing on end-to-end IoT systems, ML theory, ROS programming, and robot kinematics. My undergraduate thesis explored automatic hyperparameter optimisation for an MLP regressor controlling a prototype soft medical robot. I am seeking a six-month industry placement to apply ML and control-systems expertise to real-world robotics challenges.

Education

MSc Robotics with Industrial Application **2025–2027 (expected)**
Heriot-Watt University, Edinburgh, UK

- Current modules: End-to-End IoT Systems, Machine-Learning Theory, ROS Programming, and Robot Kinematics.
- Developing applied skills in robotics software stacks and system integration.

BEng Biomedical Engineering (First Class Honours) **2019–2023**
University of Dundee, Dundee, UK

- Key modules: Software Applications for Biomedical Engineering, Medical Instrumentation, Electronics and Instrumentation, Biomechanics and Biomaterials.
- **Final-year thesis:** see project section *(Automatic HPO for MLP Regressor in Soft Medical Robotics)*.
- **Award:** Open Prize for Biomedical Engineering (2022) *(also issued as School of Science and Engineering Certificate of Recognition)*.

Selected Projects

Automatic HPO for MLP Regressor in Soft Medical Robotics *Degree Thesis*

- Implemented an MLP regressor mapping position inputs to actuation outputs for a soft-robotics prototype.
- Designed an automatic hyperparameter-optimisation pipeline improving model accuracy and training efficiency with limited data.
- Addressed real-world constraints including non-linear kinematics and small datasets.

Össur Upper-Limb Prosthesis (Industry-Linked) *Undergraduate Project*

- Contributed to mechanical design and user-application development for an upper-limb prosthesis.
- Focused on improving mechatronic design workflow and end-user interaction.

Automated Endo-Robotic Solution *Undergraduate Team Project*

- Developed an automated robotic platform for minimally invasive tasks.
- Led mechanical design and integrated calibration and sensor feedback systems.

3D-Printed EMG Prosthetic Hand *Undergraduate Project*

- Designed and manufactured a low-cost prosthetic hand controlled using EMG signals.
- Applied biomedical-engineering and embedded-system principles in a practical build.

Laparoscopic Training Tool *Undergraduate Project*

- Created an interactive laparoscopic-surgery training system providing user feedback.
- Focused on interface design and mechanical responsiveness.

Technical Skills

Programming: Python, C++, C#, MATLAB
ML / Data: PyTorch, scikit-learn, hyperparameter optimisation, data processing
Robotics: ROS, kinematics, control systems (PID), IoT integration
Design & CAD: SolidWorks (CSWA), Autodesk Inventor, 3D printing
Other Tools: Git, Linux, LaTeX, VS Code

Experience

Class Representative – University of Dundee 2022–2023

- Liaised between students and faculty to improve delivery and organisation of engineering modules.
- Gathered and presented student feedback, helping resolve course-related issues.

Hospitality & Events – Edinburgh Fringe (Underbelly, Assembly) & Restaurants 2018–2023

- Worked in box-office, FOH, kitchen, and bar roles in high-pressure, time-sensitive environments.
- Developed teamwork, communication, and reliability under peak demand.

Volunteering & Activities

Retail Volunteer – Oxfam Shop 1 year (during school)

- Assisted with stock management, customer service, and daily operations.
- Built teamwork and responsibility in a customer-facing environment.

STEM Ambassador – University of Dundee Ingenious Project

- Produced outreach materials promoting engineering and STEM pathways to school pupils.

Mountaineering & Outdoor Clubs

- Active member of mountaineering and mountain-biking societies.
- Planned and led trips emphasising safety, risk assessment, and communication.

Certificates & Awards

- Open Prize for Biomedical Engineering, University of Dundee (2022) *(also issued as School of Science and Engineering Certificate of Recognition)*
- CSWA – Certified SolidWorks Associate (2023)
- First Aid at Work (Ofqual Level 3)

Interests

Mountain and road biking, electronics, bouldering, rope climbing, and winter mountaineering.