Dom McKean

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Project Site: https://dommckean.github.io/

Education:

Loughborough University	**Loughborough, UK**
PhD Robotics & Machine Learning	Oct. 017 – Apr. 2021
BSc Electrical and Electronics Engineering 2:1	Sep. 2014 – Jul. 2017

Experience:

Intelligent Automation Centre — **Loughborough, UK**, Oct. 2017 – Present

Data Scientist (Robotic Control)

- Designed and conducted research experiments for robotic manipulation.
- Developed **robot** - sensor networks and nodes using the **Robot Operating System** (**ROS**).
- Built data **dashboards** using **Google Data studio**.
- Designed methods for data collection while mindful of data bias and prejudices.
- Automated the cleaning and organising of data for **analysis**, **predictive modelling** and post-processing **statistics** using **Python**, **Panda**s and **relational databases** (**SQL**).
- Developed novel **time-series machine learning**/**deep learning** models (LSTM), capable of accurately predicting robot dynamics for deformable object manipulation using **Scikit-Learn**, **Numpy**, **PyTorch**.
- Created novel robot motion planners and controllers able to learn manipulation strategies using model predictive control and deep **reinforcement learning**.
- Developed various **control systems** such as; active compliance using Python, **C/C++** and **Matlab/Simulink**.
- Produced various **computer vision** systems able to identify/track flexible objects using **convolutional neural networks** (CNN), PyTorch, **OpenCV**, YOLO, **3D point clouds**, MS Kinect.
- Derived mathematical models of dynamic systems.

Loughborough University, Engines & Powertrains Research Lab — **Loughborough, UK**, Oct. 2013 - Oct. 2017

Research Engineering Technician

- Designed instrumentation, data acquisition and control systems for OEM research engine projects using Matlab/Simulink and NI LabView.
- Saved several £k by developing a variety of bespoke mechanical, electrical and software-based products for research projects, subsequently receiving a £500 bonus.
- Designed user-interfaces/dashboards that allowed students to monitor engine data and safely control various engine parameters.
- Taught students practice engineering skills during labs and tutorials.

Linde Material Handling — **Basingstoke, UK**, Feb. 2011 – Oct. 2013

Senior Engineer/Engineering Manager

- Responsible for the maintenance of electric/hydraulic materials handling machines.
- Improved efficiency and performance by using data to develop new maintenance and service schedules.
- Secured new contracts worth tens of £k receiving substantial pay rise and promotion.