

# JOSEPH M. CAMERON

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## EDUCATION

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### University of Glasgow - BSc Informatics (Hons) 2:1

September 2014 - June 2018

Relevant Courses: Algorithms & Data Structures, Object-Oriented Software Engineering, Web Application Development, Systems Programming & Design, Functional Programming, Distributed Algorithms & Systems, Academic Research Methods & Techniques, Big Data Systems, Cyber Security Fundamentals, Human-Centred Security, Machine Learning.

### University of Toronto - BSc Computer Science International Exchange Year

September 2016 - May 2017

Relevant Courses: Software Engineering, Software Engineering in Large Systems, Human-Computer Interaction, Principles of Programming Languages, Database Systems, Computer Networks, Operating Systems, Algorithmic Design & Complexity, Artificial Intelligence.

## WORK EXPERIENCE

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### Snowboard Instructor

October 2019 - April 2020

*Level 2 SBINZ Certified*

*Niseko Village Ski School*

- Completed a winter season of snowboarding in Niseko, Japan. Involved training 5 days a week to improve my snowboarding and teaching skills, alongside working as a snowboard instructor.
- Achieved my Level 1 and Level 2 SBINZ (Snowboard Instruction New Zealand) certifications during the season.
- Significantly improved my communication and interpersonal skills while instructing snowboarders of various ages, backgrounds and nationalities.

### Data Scientist (Six Month Contract)

July 2018 - December 2018

*Lead Data Scientist*

*Boxergy Ltd*

- Hired as the first, and only, data scientist for a new startup called Boxergy, which is focusing on the total electrification and decarbonisation of home energy through renewable resources.
- Analysed and cleansed the University of Edinburgh's IDEAL dataset and various raw ELEXON datasets using Python (including Pandas). Uncovered further useful insight into energy usage and pricing when combining this analysis with more investigations on other data sources such as Met Office weather.
- Trained regression models and neural networks on the aforementioned datasets to predict both household energy usage and energy pricing on various energy markets.
- Data analysis, data visualisation and machine learning skills in Python and MATLAB were crucial to secure over £100,000 of funding for Boxergy from the EU-backed Climate KIC accelerator programme and the UK government-backed BEIS Domestic DSR Phase 1 competition grant.
- Effectively communicated all analytical findings from data analysis and machine learning projects, both verbally and via data visualisations, to the company's board members during weekly board meetings.

## MAJOR PROJECTS

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### Using Machine Learning to Understand the Topology of Knots

October 2017 - June 2018

*Final Year Individual Dissertation Project*

*University of Glasgow*

- This project and its accompanying dissertation achieved a first-class grade.
- The git repository containing the code and dissertation for this project can be found at this link: <https://github.com/JoeCameron1/IndividualProject>
- The goals of this project were to successfully classify various knots tied in rope and to provide an effective user interface through which the knots could be classified.
- Knot classification was successfully achieved with a unique, state-of-the-art convolutional neural network implemented in Keras and Tensorflow.
- Involved creating datasets appropriate for machine learning. These datasets contain images of various knots in changing conditions and were used to train and validate the knot classifier. Furthermore, data augmentation techniques were utilised to increase the number of samples within these datasets and alleviate the threat of overfitting.

- Created an iOS application that can achieve portable real-time knot classification via image data from a camera and the embedded convolutional neural network that was implemented in Keras and Tensorflow.
- Evaluated the classifier with many data analysis methods and data visualisation techniques, including confusion matrices, t-SNE visualisation and ROC curves.

### **Teacher Assistant Course Matching Cumulative Project**

January 2017 - April 2017

*Course: CSC302 Engineering Large Software Systems*

*University of Toronto*

- Developed a web application that efficiently assists university department coordinators match teaching assistant applicants with appropriate courses. The application consisted of a front-end architecture designed using HTML5 CSS3 and Angular 2, along with a loosely coupled micro-service based backend architecture, where micro-services were maintained in separate Docker containers.
- Collaborated with a team of 5 other students in an agile work environment to construct an application focused on security and scalability. Resulted in a modern user interface with low-latency performance tailored to user specification.
- Received an invitation from the Course Coordinator to discuss the potential of using the application on a university-wide level. Parts of the project are now in real-time use within the university. As a result, I completed the course as 1 of 7 students out of 290 that received a grade of A+ (over 90%).

## **VOLUNTARY WORK EXPERIENCE**

### **Class Representative for Computer Science**

September 2017 - June 2018

*Final Year Representative*

*University of Glasgow*

- Elected class representative for Computer Science and Informatics by students and staff following a successful campaign.
- Responsible for engaging with and gathering feedback from students, lecturers and professors. This involved scheduling meetings with staff, where all feedback was discussed along with strategies aimed at rectifying any raised issues.
- Responsible for creating extensive reports detailing all related feedback and solutions.

### **Glasgow University Trading & Investment Club Analyst**

September 2015 - May 2016

*Senior Analyst*

*University of Glasgow*

- Assisted the acquisition of the club's initial investment fund and laid the foundation for an investment portfolio backed up by detailed analysis reports.
- Organised the club's first stock pitching event.
- Responsible for preparing and delivering presentations on trading securities, with the aim of inspiring new society members.

## **TECHNICAL STRENGTHS**

<b>Programming Languages</b>	Python, Java, C, HTML, CSS, JavaScript, SQL, Haskell, Swift
<b>Development Tools</b>	Git & GitHub, SVN, Docker, Emacs, PyCharm, Jupyter, Atom, Vim
<b>Machine Learning Frameworks</b>	Keras (Tensorflow Backend), Tensorflow, scikit-learn
<b>Web Application Frameworks</b>	Django, Angular2
<b>Databases</b>	MySQL, PostgreSQL, MongoDB, HBase, Cassandra
<b>Big Data Frameworks</b>	Hadoop MapReduce, Spark

## **PERSONAL INFORMATION**

- Dual Citizenship - British and EU Passport Holder
- Full UK Driving Licence
- Interests: Snowboarding, Winter Sports, International Travel, Hiking, Golf, Outdoor Activities in Nature