

# Luka Milic

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## Recent Work

May 2017 – Present **Ocado Technology, 10x Team, Machine Learning Specialist**

Part of a unique research and development team working on bringing '10x' improvements to Ocado by utilising cutting edge technological developments. Working on implementing state of the art machine learning algorithms for Ocado's new forecasting system and developing image recognition capabilities. Mainly focusing on deep convolutional architectures, with dilated structures for time series data and pretrained inception models for image recognition. **Main technologies:** Python, Pandas, Tensorflow, BigQuery, SQL, Docker, CUDA, Linux, JavaScript, Kubernetes and Google Cloud Platform.

Attend research conferences and communicate research developments back to the company. Attended ICML 2018 and Cognitive Computational Neuroscience 2017 with Ocado. As part of outreach supervised two groups of students for an industrial masters project, often give tours of the warehouses and attended a wide range of training courses.

September 2016 – **Spectra Analytics, Data Science Intern**

March 2017 Performed research and experimentation with deep learning techniques. Including designing a recurrent neural networks for stock market price prediction and investigating the use of convolutional neural networks for NLP applications.

Worked extensively on a tracking platform for disabled users of the London transport network which utilises clustering algorithms to understand location data and translate it into service improvement suggestions for Transport For London.

These projects built my machine learning, statistics, Python, Tensorflow, Pandas, SQL and research skills. Also JavaScript data visualisations using d3, Flask, Bootstrap and Jinja, SQL databases while using SQLAlchemy.

## Education

2015 - 2016 **MSc Computing Science, Imperial College London, Result: Distinction**

Completed thesis in the area of deep learning, designing semi-supervised convolutional neural networks to classify facial expressions in face images from sparsely labelled datasets. Used skills in machine learning, data analysis, Python, Tensorflow, GPU programming and existing experience in conducting good scientific experiments.

Completed a group project in the area of computational neurodynamics modelling the visual systems of a dragonfly related to prey capture, using spiking neural networks, CUDA, Python and numerical analysis of differential equations.

**Modules:** Robotics, Intelligent Data and Probabilistic Inference, Artificial Intelligence, Logic Based Learning, Computer Architecture, Operating Systems, Prolog and C++ Programming.

2011 - 2015 **MSci Mathematics and Physics, University Of Bristol, Result: 2:1 (69% average)**  
Completed year long lab project in the Centre for Quantum Photonics, see work experience. Gained strong theoretical and experimental skills.

**Advanced Modules:** Semiconductors, Quantum and Classical Information Theory, Cryptography, Computational Physics, Advanced Quantum Theory, Relativistic Field Theory and Particle Physics.

2004 - 2011 **West Hatch High School, London**  
A levels in Physics, Mathematics and Chemistry (AAB)

## Previous Work

Summer 2014 **Summer Research Student – Centre for Quantum Photonics, University Of Bristol**  
Set up a complex and highly automated quantum optics experiment to investigate the spectral correlations between photon pairs generated on a silicon photonic chip. Developed skills with lasers, fibre optics, C programming and working in an academic environment. Received acknowledgement on the paper “Qubit entanglement on a silicon photonic chip” Gained extensive knowledge of quantum optics and quantum information.

Summer 2013 **Intern Software Engineer – Magellium Ltd.**  
Spent 10 weeks researching and implementing improvements for a satellite image processing program GEOLOC. Used Information Theory and the C++ programming language to design an algorithm to assess the how well a mutual information based image matching system could process images. Developed software in a team environment and presented work at a poster session.

Easter 2011 **Census Collector – Office For National Statistics**

## Further Information

**Many years of experience with:** Python, TensorFlow, Pandas, Scipy, Sklearn, C, C++, Matplotlib, Numpy, Latex, Linux, Git, Docker

**Intermediate with:** BigQuery, SQL, Google Cloud Platform, Kubernetes, CUDA, bash, Arduino and digital electronics

**Basic experience with:** ROS (Robot Operating System), Javascript, Flask, HTML, CSS, SQLAlchemy, Prolog, Assembly, Lisp, Java

**Regularly attend:** London Machine Learning Meetup and other ML events. Newspeak House, a place where you can regularly meet people working in the intersection of politics and technology.

**Github** <http://github.com/lotka>

**Other interests:** philosophy, meetups, guitar, music, board games, tennis, running, societal impacts of technology, reading.