



# BRIAN FORMENTO

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## Experience

**Researcher – Data science** 08/2019 – present  
National University of Singapore, Singapore

Using 4 unstructured retinal fundus datasets to detect stages of chronic kidney disease with PyTorch.  
Conducting experiments for publications (ICML).

**Intern - Singnal processing** 07/2017 – 09/2017  
Roke Manor Research, United Kingdom

Working with Matlab, C and Python, for the implementation of a researched SP algorithm.

**Intern - Electronic engineer** 07/2016 – 09/2016  
L3 ASV, United Kingdom

Designed a PCB, reduced costs by £1450 per item.

## Projects

**Gait recognition meta-learner** 01/2019 – 07/2019  
National University of Singapore, Singapore

Used video data and one-shot learning with a recurrent convolutional neural network in a Siamese formation for gait recognition research.

**Point cloud AI denoiser** 07/2018 – 01/2019  
Southampton University, United Kingdom

Using ML to remove aliasing and moiré from point cloud render videos. Used a convolutional recurrent autoencoder.

**Scenery recognition** 07/2018 – 01/2019  
Southampton University, United Kingdom

15 class scene recognition. Achieved 3<sup>rd</sup> highest accuracy in a class of 300 students. Used ResNet50 together with an SVM.

**Protein structure predictor** 01/2018 – 07/2018  
Southampton University, United Kingdom

Secondary protein structure prediction using an LSTM. Achieved close to state-of-the-art performance.

**Weapon detector & dataset** 10/2017 – 07/2018  
Southampton University, United Kingdom

Computer vision system to detect people carrying weapons. Using Keras, Tensorflow and Python while building a custom synthetic dataset by modding a game in C#.

## Education

**Exchange Student** 01/2019 – 07/2019  
National University of Singapore, Singapore

**Key Modules:** Advanced Topics In Machine Learning, Knowledge Discovery Methods In Bioinformatics, Neural Networks, Digital Entrepreneurship.

**MEng (1st Class Hons)** 09/2015 – 07/2019  
**Electronic engineering with AI**  
Southampton University, United Kingdom

**Key Modules:** Computer Vision, Evolution of complexity, Advanced programming, Machine Learning, Computational Biology, Computer Engineering, Control & Communications, Secure Systems.

### University's entrepreneurial activities

- Co-organised and co-run 5 speaker events and 2 workshops throughout the year 16/17.
- Scouted and fast-forwarded through an incubator 3 teams, one won £25k from 3 investors in 2017.
- Pitched a start-up together with two all-star students in 2016
- Pitched another start-up in 2016 and won £3k.

## Skills

### Computer science

Numpy, Scikit-learn, Pandas, Keras, Pytorch, Matplotlib, Anaconda, Git, Docker, Linear algebra, Deep learning, Computer Vision, SQL, OpenCV, Machine learning, HTML, CSS, JavaScript, C, C++.

### Languages

English & Italian

Native

## Hackathons

Attended 8, Finalist in 3.

**F10 hackathon** 15/09/2019  
Pwc headquarters, Singapore

Developed with a multicultural team an AI tool to aid corporate action decision making. It uses stock exchange data and random forest decision trees.

**Yitu online hackathon** 20/02/2019  
Singapore

Object detection task on pedestrian/cars, my model achieved the 10<sup>th</sup> highest accuracy in the whole of Singapore, **won \$300.**