

# Simao Eduardo

**PhD student** in **Machine Learning, U. of Edinburgh**. Current research on **Robust Machine Learning, Deep Generative Models, Relational Learning, Bayesian Inference**. Has worked on Optimization, Image & Signal Processing.

3.25 Informatics Forum  
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**Website:** [sfme.github.io](http://sfme.github.io)

## EXPERIENCE

### PhD Student – University of Edinburgh, UK

Oct 2016 - PRESENT

PhD student at the School of Informatics, Machine Learning: Generative Modelling under Noise. **Supervisors:** Charles Sutton (main), Chris Williams (secondary).

### Tutor / Marker – University of Edinburgh, UK

Oct 2016 - 2018

Postgraduate-level courses, tutorials and labs. Machine Learning and Pattern Recognition, Machine Learning Practical (Deep Learning Course), Extreme Computing (MapReduce, HDFS, etc).

### Research Assistant Fellow – Instituto de Telecomunicações @ Instituto Superior Tecnico (IST), Lisbon PT

Dec 2014 - Aug 2015

Researched Proximal Algorithms (Optimization) for Inverse Problems in Imaging (PACConvex): Image Segmentation and Super-Resolution. **References:** Mario A. T. Figueiredo (IST), JM Bioucas-Dias (IST).

### Junior GNSS Software Engineer, R&D – GMV, Lisbon PT

May 2013 - May 2014

Developed GNSS simulator for assessing robust carrier phase techniques (Signal Processing), for the European Space Agency. Integrated novel methods, analysis and reporting. **Reference:** Teresa Ferreira.

## Publications / Reports

### Robust Variational Autoencoders for Outlier Detection in Mixed-Type Data – AISTATS 2020

v1: 2019, v2: 2020

Simao Eduardo, Alfredo Nazabal, Chris Williams, Charles Sutton  
<https://arxiv.org/pdf/1907.06671.pdf>

### Data Cleaning using Probabilistic Models of Integrity Constraints – NIPS 2016 Workshop on Artificial Intelligence for Data Science (AI4DataSci 2016)

2016

Simao Eduardo, Charles Sutton

## SKILLS / KNOWLEDGE

**Programming:** Python, Java, Matlab, C, SQL, Julia

**Framework:** Pytorch, Scipy, Numpy, git, Pandas, SQLite, Pyro, Tensorflow (basic), scikit-learn, Jupyter, AWS, matplotlib, seaborn

**Maths:** Machine Learning, Optimization, Signal Processing, Control, Time-series, Probabilistic Inference, Variational Inference, Deep Learning, Unsupervised Learning, Information Theory, NLP (basic), Random Forests, Decision Trees

## AWARDS

Amazon Research Award, GPUs and Mentorship, 2018–2019

EPSRC CDT Scholarship, funding 2015–2019, EP/L106427/1

Research Assistant Fellowship, PACConvex project, 2014–2015

Erasmus Scholarship, MSc Thesis at Aalborg University, 2011–2012

[http://workshops.inf.ed.ac.uk/nips2016-ai4datasci/papers/NIPS2016-AI4DataSci\\_paper\\_12.pdf](http://workshops.inf.ed.ac.uk/nips2016-ai4datasci/papers/NIPS2016-AI4DataSci_paper_12.pdf)

## **Proximal Algorithms in Inverse Imaging Problems: First and Second-Order Splitting – Technical Report**

2015

Simao Eduardo, Mario Figueiredo, JM Bioucas-Dias

[https://sfme.github.io/TechReport\\_Proximal\\_Algos\\_2015\\_IST.pdf](https://sfme.github.io/TechReport_Proximal_Algos_2015_IST.pdf)

## **Cell load balancing in heterogeneous scenarios: A 3GPP LTE case study – Wireless VITAE 2013, IEEEExplore**

2013

Simao Eduardo, Antonio Rodrigues, Albena Mihovska, Neeli R. Prasad

<https://ieeexplore.ieee.org/document/6617063?arnumber=6617063>

## **EDUCATION**

### **PhD Informatics (Ongoing), University of Edinburgh**

Oct 2016 - PRESENT

Thesis: ‘Bayesian Inference under Noise: Applications in Data Science’,

Supervisors: Charles Sutton, Chris Williams

### **MSc(R) Data Science (Distinction), University of Edinburgh**

Sept 2015 - Sept 2016

Thesis: ‘Data Cleaning in Tabular Datasets: Error Detection and Robust Rule Estimation’, Supervisors: Charles Sutton

### **MSc (A- top 7%) Electrical and Computer Engineering, Instituto Superior Tecnico, University of Lisbon**

Sept 2010 - Jan 2013

MS Thesis: ‘Cell load balancing in heterogeneous scenarios: A 3GPP LTE case study’, Supervisors: Antonio Rodrigues (IST), Albena Mihovska

### **BSc (A- top 6%) Electrical and Computer Engineering, Instituto Superior Tecnico, University of Lisbon**

Sept 2007 - Jan 2010

## **REFERENCES**

Dr Charles Sutton – [csutton@inf.ed.ac.uk](mailto:csutton@inf.ed.ac.uk)

Prof. Chris Williams – [ckiw@inf.ed.ac.uk](mailto:ckiw@inf.ed.ac.uk)

Prof. Mario A. T. Figueiredo – [mtf@lx.it.pt](mailto:mtf@lx.it.pt)

Teresa Ferreira – [teresa.ferreira@gmv.com](mailto:teresa.ferreira@gmv.com)