

Simao Eduardo

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

3.25 Informatics Forum
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EXPERIENCE

PhD Student – University of Edinburgh, UK

Oct 2016 - PRESENT

PhD student, School of Informatics, **Machine Learning: ‘Generative Modelling under Noise’**. Used: Python, SQL, JAVA, PyTorch, Scipy, Numpy, Pandas, Matplotlib, Git, etc. **Supervisors:** **Charles Sutton (main)**, **Chris Williams (secondary)**.

Tutor / Marker – University of Edinburgh, UK

Oct 2016 - Dec 2018

Postgraduate-level courses: tutorials and labs. **Machine Learning and Pattern Recognition**, Machine Learning Practical (**Deep Learning course**), Extreme Computing (**MapReduce, HDFS**, etc). Used: Python, JAVA. **Reference:** on request.

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

Dec 2014 - Aug 2015

Researched Proximal Algorithms (**Optimization**) for Inverse Problems in Imaging: **Segmentation and Deblurring in Super-Resolution Images. Image Processing**. PACONVEX project. Used: MATLAB, Latex. **References:** **Mario A. T. Figueiredo (IST)**, **JM Bioucas-Dias (IST)**.

Junior GNSS Software Engineer, GMV Innovating Solutions, Lisbon PT

May 2013 - May 2014

Developed GNSS receiver simulator for assessing robust carrier phase techniques (**Signal Processing – SP**), for the European Space Agency (ESA). Integrated novel **SP and statistical methods** (time-series). Analysis and reporting for ESA. Used: MATLAB, C. MS Excel and Word. **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>

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, Time-Series (Kalman Filters, Autoregressive models), Probabilistic Inference, Variational Inference, Deep Learning, Unsupervised Learning, Information Theory, NLP (basic), Random Forests, Decision Trees

AWARDS

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

Research Assistant Fellowship, PACONVEX project, 2014–2015

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

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

2016

Simao Eduardo, Charles Sutton

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

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

2013

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

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

EDUCATION

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 Electrical and Computer Engineering (A- top 7%; 17/20), Instituto Superior Tecnico, University of Lisbon

Sept 2010 - Jan 2013

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

BSc Electrical and Computer Engineering (A- top 6%; 16/20), Instituto Superior Tecnico, University of Lisbon

Sept 2007 - Aug 2010

REFERENCES

Dr Charles Sutton – csutton@inf.ed.ac.uk

Prof. Chris Williams – ckiw@inf.ed.ac.uk

Prof. Mario A. T. Figueiredo – mtf@lx.it.pt

Teresa Ferreira – teresa.ferreira@gmv.com