Guillem HURAULT | Engineer

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Engineer and PhD candidate experienced in statistical Machine Learning applied to healthcare- and research-related projects. Additional background in Economics.

Education

2018–Today **PhD in Biomedical Engineering**, *Department of Bioengineering, Imperial College London*, UK.
Development of machine learning and mathematical models to predict eczema. Supervisor: Dr. Tanaka.

2016–2017 **MSc in Biomedical Engineering, Neurotechnology**, *Imperial College London*, UK, Distinction.

2014–2018 **Master's Degree in Engineering**, *Ecole Centrale de Lyon*, one of FRANCE's top engineering school.

2014–2016 **Bachelor's Degree in Economics**, *Université Lyon 2*, FRANCE.

Professional Experience

October 2017 – Today **Research Assistant**, *Department of Bioengineering, Imperial College London*, UK.
– Developed statistical machine learning models of eczema for personalised medicine, with a particular focus on: multilevel Bayesian models, regularised regressions, time-series, ODE, model-based clustering, image recognition.
– Performed literature reviews, designed visualisations, communicated results in comprehensive reports, scientific articles and during conferences.
– Co-supervised student projects, organised group meetings and maintained the group's website.

2019 – Today **Teaching Assistant in Mathematics**, *Imperial College London*, UK.

May-July 2016 **Research Intern**, *Laboratoire de Neurosciences Cognitives (CNRS UMR 7291, Aix-Marseille Université).*
Analysed fMRI images using Machine Learning to understand the role of the oculomotor cortex in social perception.

Other Experiences

2019 – Today **Bioengineering PhD representative**, *Imperial College London.*

2014-2017 **Engineering student**.
– Investigated the evolution of eczema using Machine Learning methods in the Biological Control Systems Lab.
– Designed a genetic algorithm in a research project with LIRIS Lab (CNRS) to solve a scheduling problem.
– Supervised a 6-person team for HEXADRONE to design and test a security system to avoid the crash of a drone.

2015 **General Secretary**, *Forum Perspectives.*
Organized a yearly career fair with 100 companies, 2000 students participating and a turnover of 250k€.

2015 **Treasurer, Communication coordinator and Editor** of Centrale Lyon's newspaper Piston Hebdo.

2015 Active committee member of Centrale Lyon's Cinema Society.

Skills

Languages ○ Native **French** ○ Fluent **English** ○ Notions in Italian and Spanish

Programming **Working knowledge**: R (incl. Stan, ggplot2, Shiny, knitr), MATLAB (incl. SPM), LaTeX.
Basic knowledge: Python, SQL, C# (incl. Infer.NET), Mathematica, HTML, Tableau, JavaScript, C++.

Software Microsoft Office (incl. Publisher), Microsoft Visual Studio, Adobe Premiere, Gimp.

Publications and Presentations

[1] M. McAleer, I. Jakasa, **G. Hurault**, P. Sarvari, I. McLean, R. Tanaka, S. Kezic and A. Irvine, "Systemic and stratum corneum biomarkers of severity in infant AD include markers of innate and Th-related immunity and angiogenesis", *British Journal of Dermatology*, vol. 180, no. 3, pp. 586–596, 2019.

[2] **G. Hurault**, M. Schram, E. Roekevisch, P. Spuls and R. Tanaka, "Relationship and probabilistic stratification of EASI and oSCORAD severity scores for atopic dermatitis", *British Journal of Dermatology*, vol. 179, no. 4, pp. 1003-1005, 2018.

[3] "Bayesian Modelling to Predict the Evolution of Eczema Severity", poster presented at the International Conference on Systems Biology, 2018.

[4] "Bayesian Machine Learning to Predict Short-term Course of Eczema Severity", presented at BioMedEng18, 2018

[5] "Predicting short- and long-term outcomes of a systemic therapy for atopic dermatitis using machine learning methods", presented at the International Symposium on Atopic Dermatitis, 2018

[6] "How can Machine Learning help our understanding of Atopic Dermatitis?", presented at the London Skin Club, 2017