

Mehdi Bahri *PhD Student in Machine Learning*

mehdi.bahri15@imperial.ac.uk • +44 7706 783726 • <https://fr.linkedin.com/in/mehdibahri/en> • <http://bahri.io>

Education

Imperial College London	LONDON, UNITED KINGDOM
PhD. Machine Learning Geometric Deep Learning & Bayesian non-parametrics with applications to Computer Vision. <i>Supervisor: Dr Stefanos Zafeiriou.</i>	2017 – (2021)
MSc. Advanced Computing - Distinction (84%) Focus on statistical machine learning. Thesis: Robust Low-Rank modeling on Tensors: New Algorithms and Extensive Comparisons. <i>Awarded the Winton Capital Advanced Computing MSc Project Prize.</i>	2015 – 2016
Grenoble INP - Ensimag	GRENOBLE, FRANCE
BSc. and MSc. Applied Mathematics and Computer Science - with High Honours Focus on statistics, numerical optimization, numerical analysis, databases, software engineering.	2013 – 2016
Lycée Chateaubriand	RENNES, FRANCE
Classes Préparatoires aux Grandes Écoles PC* Intensive training in mathematics, physics, and chemistry for the nationwide competitive examinations.	2010 – 2013

Publications

- M. Bahri, Y. Panagakis, and S. Zafeiriou, "Robust Kronecker Component Analysis" *in review for IEEE TPAMI, Special Issue on Compact and Efficient Feature Representation and Learning in Computer Vision* ([arXiv:1801.06432](https://arxiv.org/abs/1801.06432))
 - M. Bahri, Y. Panagakis, and S. Zafeiriou, "Robust Kronecker-Decomposable Component Analysis for Low Rank Modeling" in International Conference on Computer Vision (ICCV) 2017
 - N. Xue, G. Papamakarios, M. Bahri, Y. Panagakis, and S. Zafeiriou, "Robust Low-rank Tensor Modelling Using Tucker and CP Decomposition" in European Signal Processing Conference (EUSIPCO) 2017
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Professional Experience and Selected Projects

Speechmatics (Cantab Research Ltd.) - Speech Recognition Intern	CAMBRIDGE, UNITED KINGDOM
Research & Development <ul style="list-style-type: none">• Improving the RNN language models by implementing research papers in TensorFlow and C++• Divided model size by 4 while keeping the same cross-entropy loss / perplexity and WER	04/17 - 07/17
HarperCollins Publishers - Data Scientist	LONDON, UNITED KINGDOM
Global Pricing and Analytics <ul style="list-style-type: none">• Graph mining and influence maximization to maximize uplift of books on special offers• Analyzed MongoDB databases of more than 100Gb with scikit-learn and networkx	09/16 - 03/17
Imperial College - Master's Thesis	LONDON, UNITED KINGDOM
Robust Low-Rank Modeling on Tensors: New Algorithms and Extensive Comparisons <ul style="list-style-type: none">• Devised 4 ADMM solvers and a Variational Bayes algorithm for robust tensor factorizations (MATLAB)• Compared against 11 state-of-the-art methods on computer vision benchmarks• Analyzed 500Gb of experimental data, showed improvements of up to 16% higher PSNR and FSIM• Published in top venue <i>Supervisors: Dr Stefanos Zafeiriou & Dr Yannis Panagakis.</i>	04/16 - 09/16
Morgan Stanley - Summer Analyst (Tech & Data)	LONDON, UNITED KINGDOM
Full-stack development of a trade control system prototype <ul style="list-style-type: none">• Software engineering (Java, Javascript, git flow, legacy code, tests, architecture design)• Presented at the global meeting of the sub-department, project continued for integration into production	06/15 - 09/15
CEA Grenoble & Ensimag - Specialism project	GRENOBLE, FRANCE
Prediction of the nature of missing values in quantitative proteomics <ul style="list-style-type: none">• Research project on unsupervised learning in a team of three• Supervised by a statistician from the French Alternative Energies and Atomic Energy Commission (CEA)	06/15

TIMC-IMAG & Ensimag - Independent Study Option

GRENOBLE, FRANCE

Probabilistic inference and modeling of over-diagnosis

01/15 - 05/15

- Joint laboratory with the University of Grenoble's Faculty of Medicine
- Bayesian Modeling of over-diagnosis in a population of patients
- Hybrid MCMC-EM algorithms for inference (R implementation)

Presented results to a committee of researchers. Earned second best mark of the cohort.

Awards and Scholarships

2017	Full PhD Scholarship (EPSRC DTP) from the Department of Computing (<i>seven recipients per year</i>)
2016	Winton Capital Advanced Computing MSc Project Prize (£1200) <i>best thesis in Computer Science (1/188 students)</i>
2016	Pump it Up: Data Mining the Water Table (DrivenData Competition) <i>top 7%</i>
2015	Explo'ra Sup grant for studying at Imperial College London (3000€, French government)
2013	First prize at the HackMyCity Hackathon in Grenoble

Skills

	Computing skills	Languages
Programming (<i>advanced</i>)	Python, Java, C, Shell	French <i>Native</i>
Programming (<i>intermediate</i>)	SQL, Javascript, Prolog, C++	English <i>Fluent</i>
Modeling	MATLAB, R, NumPy/SciPy, TensorFlow, Scikit-learn	Spanish <i>Intermediate</i>
Tools	Git, L ^A T _E X, MongoDB	

Teaching Activities**Tutorial support**

2018	Teaching Assistant for CO495 - <i>Advanced Statistical Machine Learning</i>
2018	Teaching Assistant for CO493 - <i>Data Analysis and Probabilistic Inference</i>

Student supervision

2018	MSc, Shunwang Gong (Independent Study Option and MSc thesis) <i>Geometric Deep Learning</i> with Dr Stefanos Zafeiriou
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Community Service and Leadership**As a PhD student**

2017 - current	Member of the ACM Student Chapter <i>Imperial College London</i>
2017	Presented poster at the <i>Official Launch of the Machine Learning Initiative</i> at Imperial College London

As an undergraduate

2013 - 2015	Elected student representative <i>Ensimag's Education and Student Life Committee</i>
2014 - 2015	Member of the administration board <i>Ensimag's Students' Union</i>
2014 - 2015	Member of the administration board <i>Ensimag's Junior-Enterprise (Nsigma)</i>
2014 - 2015	Morgan Stanley Campus Ambassador <i>Ensimag</i>

Professional bodies

Student Member of the IEEE and of the Computer Society. Member of the Computer Vision Foundation (CVF).

Interests

Fitness & Nutrition • Cycling

REFERENCES AVAILABLE UPON REQUEST.