

Mehdi Bahri *PhD Student in Machine Learning*

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Education

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

Publications

- M. Bahri, Y. Panagakis, and S. Zafeiriou, "Robust Kronecker Component Analysis" *IEEE TPAMI, Special Issue on Compact and Efficient Feature Representation and Learning in Computer Vision*, 2018 (accepted for publication) ([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

Google AI - Research Intern	NEW YORK, NY
Machine Intelligence & Machine Perception	10/18 - 01/19
<ul style="list-style-type: none">• Robust generative models for meshes, pooling on meshes• Implementation in TensorFlow, Python, C++	
JPMorgan Chase & Co - Quantitative Associate Intern	LONDON, UNITED KINGDOM
Equities Systematic Trading QR	06/18 - 08/18
<ul style="list-style-type: none">• Quantitative Research Off-Cycle Internship in Machine Learning• Time series forecasting and volatility modeling for automated trading of single stocks options	
Speechmatics (Cantab Research Ltd.) - Speech Recognition Intern	CAMBRIDGE, UNITED KINGDOM
Research & Development	04/17 - 07/17
<ul style="list-style-type: none">• Improved 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	
HarperCollins Publishers - Data Scientist	LONDON, UNITED KINGDOM
Global Pricing and Analytics	09/16 - 03/17
<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	
Imperial College London - Master's Thesis	LONDON, UNITED KINGDOM
Robust Low-Rank Modeling on Tensors: New Algorithms and Extensive Comparisons	04/16 - 09/16
<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	
Supervisors: Dr Stefanos Zafeiriou & Dr Yannis Panagakis.	

Morgan Stanley - Summer Analyst (Tech & Data)

LONDON, UNITED KINGDOM

Full-stack development of a trade control system prototype

06/15 - 09/15

- 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

CEA Grenoble & Ensimag - Specialism project

GRENOBLE, FRANCE

Prediction of the nature of missing values in quantitative proteomics

06/15

- Research project on unsupervised learning in a team of three
- Supervised by a statistician from the French Alternative Energies and Atomic Energy Commission (CEA)

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

2019	IPAM <i>Geometry and Learning from Data in 3D and Beyond</i> Workshop II and IV travel grants (UCLA)
2018	Google Computer Vision Summit <i>fully-funded invitation to Google Zürich & poster presentation</i>
2017	Full PhD Scholarship from the Department of Computing
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, TensorFlow, Scikit-learn, Pytorch	Spanish <i>Intermediate</i>
Tools	Git, L ^A T _E X, MongoDB	

Teaching Activities

Tutorial support

2019	Teaching Assistant for CO460 - <i>Deep Learning</i>
2018	Teaching Assistant for CO495 - <i>Advanced Statistical Machine Learning</i>
2018	Teaching Assistant for CO493 - <i>Data Analysis and Probabilistic Inference</i>

Student co-supervision

2018	MSc, Shunwang Gong (Independent Study Option and MSc thesis) <i>Geometric Deep Learning</i> with Dr Stefanos Zafeiriou (<i>Distinguished Project Award</i>)
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Community Service and Leadership

As a PhD student

2019	KCL/UCL Junior Geometry Seminar (Invited Speaker: <i>Geometric Deep Learning</i>)
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.