Mehdi Bahri *PhD Student in Machine Learning*

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Education

Imperial College London — London, United Kingdom

PhD. Computer Science — *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 **Winton Capital Advanced Computing MSc Project Prize**.*

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.
2010 - 2013: Classes Préparatoires aux Grandes Écoles PC - Lycée Chateaubriand, Rennes, France.*

Publications

- **M. Bahri**, Y. Panagakis, and S. Zafeiriou, "Robust Kronecker Component Analysis" in IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI) 2019 **(arXiv: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

Professional Experience and Selected Projects

Google AI - Research Intern — New York, NY

Machine Intelligence & Machine Perception — *10/18 - 01/19*
- 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*
- 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*
- 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*
- 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*
- 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

Awards and Scholarships

2019	Qualcomm Innovation Fellowship Europe ($40 000)
2019	Amazon AWS Cloud Credits for Research ($6000)
2019	IPAM (UCLA) *Geometry and Learning from Data in 3D and Beyond* Workshops II and IV travel grants
2018	Google Computer Vision Summit *fully-funded invitation to Google Zürich*
2017	Full PhD Scholarship from the Department of Computing
2016	Winton Capital Advanced Computing MSc Project Prize (£1200) *best thesis in Computer Science (1/188 students)*
2016	Pump it Up: Data Mining the Water Table (DrivenData Competition) *top 7%*
2015	Explo'ra Sup grant for studying at Imperial College London (3000€, French government)
2013	First prize at the HackMyCity Hackathon in Grenoble

Presentations and Talks

2019	Qualcomm - San Diego Headquarters (two talks to ML team and CV team)
2019	KCL/UCL Junior Geometry Seminar (Invited Speaker: *Introduction to Geometric Deep Learning*)
2018	Presented poster at the Google Computer Vision Summit
2017	Presented poster at ICCV
2017	Presented poster at the *Official Launch of the Machine Learning Initiative* at Imperial College London

Skills

Computing skills

Programming *(advanced)*	Python, Java, C, Shell
Programming *(intermediate)*	SQL, Javascript, Prolog, C++
Modeling	MATLAB, R, NumPy, TensorFlow, Scikit-learn, Pytorch
Tools	Git, LaTeX, MongoDB

Languages

French	*Native*
English	*Fluent*
Spanish	*Intermediate*

Teaching Activities

Tutorial support

2019 & 2020	Teaching Assistant for *CO460 - Deep Learning*
2018	Teaching Assistant for *CO495 - Advanced Statistical Machine Learning*
2018	Teaching Assistant for *CO493 - Data Analysis and Probabilistic Inference*

Student co-supervision

2018	MSc, Shunwang Gong (Independent Study Option and MSc thesis) *Geometric Deep Learning* with Dr Stefanos Zafeiriou (*Distinguished Project Award*)

Community Service and Leadership

As a PhD student

2019 - current	Reviewer for IEEE T-PAMI, IEEE T-SMC:Systems
2017 - current	Member of the ACM Student Chapter *Imperial College London*

As an undergraduate

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

Professional bodies

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

Interests

Fitness & Nutrition • Cycling

References available upon request.