

# Mehdi Bahri *PhD Student in Machine Learning*

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## Education

- Imperial College London LONDON, UNITED KINGDOM  
**PhD. Machine Learning** 2017 – (2021)  
Bayesian non-parametrics, geometry, and deep learning with applications to Computer Vision.  
*Supervisor: Dr Stefanos Zafeiriou.*
- 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.
- Lycée Chateaubriand RENNES, FRANCE  
**Classes Préparatoires aux Grandes Écoles PC\*** 2010 – 2013  
Intensive training in mathematics, physics, and chemistry for the nationwide competitive examinations.
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## Publications

- **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
  - **M. Bahri**, Y. Panagakis, and S. Zafeiriou, "Structured Dictionary Learning as Robust Low-Rank Tensor Factorizations" in *Preparation for IEEE TPAMI, Special Issue on Compact and Efficient Feature Representation and Learning in Computer Vision*
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## Professional Experience and Selected Projects

- Speechmatics (Cantab Research Ltd.) - Speech Recognition Intern CAMBRIDGE, UNITED KINGDOM  
**Research & Development** 04/17 - 07/17
  - 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
- 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 - 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

**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.

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**Awards and Scholarships**

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|------|---|
| 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   |

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**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 <sup>A</sup> T <sub>E</sub> X, MongoDB    |                             |

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**Community Service and Leadership**
**As a PhD student**

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|------|--|
| 2017 | 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**

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|-------------|--|
| 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).

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**Interests**

Fitness & Nutrition • Cycling

REFERENCES AVAILABLE UPON REQUEST.