Zaccharie Ramzi | PhD student

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Education

- **CEA Neurospin & Cosmostat - INRIA Saclay, PhD** — **Gif-sur-Yvette**
  PhD in deep learning for image reconstruction — *Since February 2019*
  The main focus of my thesis is build an architecture that will allow for the reconstruction of undersampled MRI data in 3D and 3D+time. This requires working in the fields of compressed sensing, optimization, computer vision, deep learning, wavelets.
- **ENS Cachan, MVA** — **Cachan**
  MSc in machine learning, graduated with highest honors, grade of 16.3 — *2016–2017*
  Courses in statistical learning, optimization, graphs, graphical models, reinforcement learning, object recognition, kernel methods, text mining, bandit theory
- **Telecom ParisTech** — **Paris**
  Engineering diploma, specialization in machine learning — *2013–2017*
  Courses in mathematical statistics, optimization, relational databases, data mining, data visualization, introduction to machine learning
- **Lycée Blaise Pascal** — **Orsay**
  *Preparatory class, MP** — *2011–2013*
  Intensive courses in mathematics and physics

Technical skills

- **My go-to programming language:** Python
- **My typical development environment:** Atom + Git + Docker + Jupyter notebook
- **Programming languages I used for some projects:** Java, Scala, Ruby on Rails, Javascript, R, Matlab, Shell

Professional experiences

- **xbird** — **Berlin**
  Data scientist — *2017-2019*
  I was in charge of building data pipelines, reading scientific literature, specifically on human activity recognition, modeling and implementing ad hoc machine learning models to efficiently detect human activities with smartphone and wearable data (GPS, accelerometer), deploying to production and maintaining said models, presenting research results to both tech and non-tech teams.

- **BioSerenity - Brain and Spine Institute** — **Paris**
  Research intern — *April–August 2017*
  I was in charge of benchmarking deep learning algorithms for epileptic crisis detection in EEG signals, implementing one in tensorflow and looking for potential improvements.

- **Celmatix** — **New-York**
  Data engineer and data science intern — *March–September 2016*
  As a data engineer I was in charge of implementing data pipelines and deploying them. As a data scientist I was in charge of developping a blood hormone level model.

- **Ekimetrics** — **Paris**
  Data science intern — *August 2015–February 2016*
  I was in charge of the full stack development of web applications and performing data analysis.

Open source projects

A selection of the open sources projects I take part in during my thesis. All of them are on Github.

- **fastmri-reproducible-benchmark**
  Deep Learning for MRI reconstruction — `fastmri-reproducible-benchmark`
  Using the code in this repo, I secured the 2nd spot in the fastMRI 2020 brain reconstruction challenge (TBA).

- **TF-KB-NUFFT**
  Non-Uniform Fast Fourier Transform in TensorFlow — `tfkbnufft`
  The NUFFT is essential in applications ranging from MRI to Cosmology.

- **GRAPPA**
  GRAPPA algorithm for MRI reconstruction — `grappa`
  The typical reconstruction algorithm used in Siemens MRI scanners.

- **ModOpt**
  Modular Optimisation — `ModOpt`

- **pysap-mri**
  MRI reconstruction — `pysap-mri`

Miscellaneous

- I did some private tutoring from 2012 till 2015. I mostly helped high school students in maths and physics.
- French is my mother tongue and I speak English at a C1 level (TOEFL: 110). I can speak a bit of conversational German. I know how to (slowly) read arabic even though I don't understand it, and I tried learning Spanish during my trip to Cuba.
- I was part of a football team for 5 years, mostly during my high school years. In the process we secured the first spot in the second departmental division and got promoted in first division.
- I am a huge Coen Brothers and Stanley Kubrick enthusiast. More generally I love cinema, and enjoy a lot watching the web-serie *Blow up* by ARTE.