# Michaël **Ramamonjisoa**

PhD Student in Computer Vision and Deep Learning

*6-8, Av Blaise Pascal – Cité Descartes 77455 Champs-sur-Marne (France)* | *French*

+ 33 6 61223866 | ramamonjisoa.michael@gmail.com | https://michaelramamonjisoa.github.io/ | MichaelRamamonjisoa


## Education

### Ecole Normale Supérieure Paris-Saclay
*Paris area, France*

Master's degree - Mathématiques Vision Apprentissage (MVA)
*2017 – 2018*

- **3D Computer Vision** (R. Marlet, P. Monasse, M. Aubry); **Audio signal Analysis, Indexing and Transformations** (R. Badeau, G. Richard); **Introduction to Digital Imaging** (J. Delon, Y. Gousseau); **Object Recognition and Computer Vision** (I. Laptev, J. Ponce, C. Schmid, J. Sivic); **Speech and Language Processing** (E. Dupoux, B. Sagot, N. Zeghidour);
- **High Dimension Statistical Learning** (S. Mallat); **Convex Optimization** (A. D'Aspremont); **Deep Learning** (V. Lepetit); **Kernel Methods for machine learning** (J. Mairal, J-P. Vert); **Probabilistic Graphical Models** (F. Bach, G. Obozinski); **Unsupervised Learning** (R. Vidal)

**Projects:**
**Unsupervised Learning**: Low Rank Matrix Completion, Face Clustering (Matlab)
**Object Recognition and Computer Vision:** Training CNNs using synthetic images of people (Torch, Python, Blender)
**Introduction to Digital Imaging:** Texture Synthesis using CNNs (Caffe, Python)

### Imperial College London
*London, United Kingdom*

MSc Optics and Photonics
*2013 – 2014*

- Double degree in engineering with IOGS
- **Optics**, **Photonics**, **Information theory**, **Biophotonics**

### Institut d'Optique Graduate School Paristech (IOGS)
*Paris area, France*

Grande Ecole - 3rd year abroad
*2011 – 2014*

- Engineering Diploma
- **Optics**, **Signal and image processing**, **Electronics**, **Physics**

## Professional experience

### IMAGINE team- Ecole des Ponts/LIGM
*Paris area, France*

PhD Student
*Oct. 2018 – present*

Disentangling for Scene Understanding from Images – **Supervisor: Prof. Vincent Lepetit**

- 3D Geometry Estimation, Scene Understanding, 3D Pose Estimation

### Niantic
*London, United Kingdom*

Research Software Engineering Intern
*Jul. – Nov. 2019*

Research in Computer Vision and Deep Learning

### Prophesee (formerly Chronocam)
*Paris, France*

Research Software Engineering Intern
*Apr. – Sept. 2018*

Double Frequency Tracking Using Event-Based Cameras

### HGH Systèmes Infrarouges
*Paris area, France*

Project Engineer
*Jan. 2015 – Sept. 2017*

- Manager of the infrared testing software (Infratest) of HGH: designed signal and image processing algorithms for optronics systems

### Thalès Research & Technology
*Paris area, France*

Intern
*June – Nov. 2014*

Optical Design of a Lidar; signal processing for imaging on Matlab

### ONERA (The French Aerospace Lab)
*Paris area, France*

Intern
*May – July 2013*

Designed a 3D-model of an urban area using Cinema 4D, then tested ONERA's Radar imaging algorithms on the 3D model

## Publications

- M. Ramamonjisoa†, Y. Du†, V. Lepetit, **Predicting Sharp and Accurate Occlusion Boundaries in Monocular Depth Estimation Using Displacement Fields**, *IEEE Conference on Computer Vision and Pattern Recognition (CVPR)*, 2020
- M. Ramamonjisoa, V. Lepetit, **SharpNet: Fast and Accurate Recovery of Occluding Contours in Monocular Depth Estimation**, *The IEEE International Conference on Computer Vision (ICCV) Workshops*, 2019
- G. Pitteri†, M. Ramamonjisoa†, V. Lepetit, **On Object Symmetries and 6D Pose Estimation from Images**, *2019 International Conference on 3D Vision (3DV)*, 2019 † *denotes equal contribution*
- C. Barrat, T. Lepot, M. Ramamonjisoa, S. Fradcourt, **Extension to NIR and visible ranges of high-resolution relative spectral response measurement using Fourier Transform Infrared Spectrometer (FTIR) of CMOS FPAs**, *Proc. SPIE 10433*, Electro-Optical and Infrared Systems: Technology and Applications XIV, 1043316 (6 October 2017); doi: 10.1117/12.2278301
- C. Barrat, T. Lepot, M. Ramamonjisoa, S. Fradcourt, **A practical implementation of high resolution relative spectral response measurement of CMOS IRFPAs using Fourier Transform Infrared Spectrometer (FTIR)**, *Proc. SPIE 9987*, Electro-Optical and Infrared Systems: Technology and Applications XIII, 99870V (21 October 2016); doi: 10.1117/12.2242014

## Teaching

- **Numerical Methods**, 1st year of Master practical sessions, Institut d'Optique Graduate School
- **Artificial Intelligence**, 1st year of Master practical sessions, Université de Bordeaux
- **Deep Learning**, 1st year of Master practical sessions, Bordeaux INP

## Relevant skills

- **Computer skills**: Python, C++, Matlab, Pytorch, Keras, Tensorflow, Unix shell, Cinema 4D, Blender, SolidWorks, LaTeX
- **Languages**: French (native); English (fluent, TOEFL 108/120); Spanish (conversational); Malagasy (basic skills); Mandarin (basic skills)