Michaël **Ramamonjisoa**

PHD STUDENT IN COMPUTER VISION AND DEEP LEARNING

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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

LaBRI - Université de Bordeaux
Bordeaux, France

Starting at **IMAGINE - Ecole des Ponts** on October 2019

PHD STUDENT   *Oct. 2018 – present*

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

1st place at admission exam of Ecole Doctorale de Mathématiques et d'Informatique

Prophesee (formerly Chronocam)
Paris, France

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   *Jun. – Nov. 2014*

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

ONERA (The French Aerospace Lab)
Paris area, France

INTERN   *May – Jul. 2013 (3 mois)*

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

Publications

- 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*
- 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
- 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)