Diana MANDACHE

PhD Candidate, Eng, R&D:
signal & image processing, machine learning

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Education

2018–present — **PhD in INFORMATICS**, *Institut Pasteur - Bioimage Analysis Unit, LLTech SAS*, Paris, France, Industry-oriented fellowship (CIFRE).
- Thesis : Machine learning methods applied for accelerated detection of breast cancer in biopsies imaged with novel optical tomography techniques

2016–2017 — **MSc in IMAGE ANALYSIS**, *(cursus in French)*
University Pierre and Marie Curie, Sorbonne Sciences, Paris, France.
- Scholarship of The French Government granted on academic criteria
- Practical Project : Compressed Sensing based denoising, a Java Plugin for Icy Bioimaging Platform

2012–2016 — **BEng in COMPUTER SCIENCE**, *(cursus in English)*
University of Craiova, Faculty of Automation, Computers and Electronics, Craiova, Romania.
- Merit-scholarship of The Romanian Government for academic excellence
- Diploma Project : Python application for simulation of analog electronic circuits with UI

2008–2012 — **BAC in Mathematics & Informatics**, *Frații Buzești National College*, Craiova, Romania.

Experience

2021 — **Sainte-Anne Hospital, GHU Paris**, *extemporaneous biopsy imaging for clinical study*.

2021 — **Sorbonne Sciences University, Paris**, *mentoring master's students for practical work*.

2020 — **Pasteur Institute of Tunis**, *teaching assistant*, PHiND Access European Commission Project, Introduction to Python - intensive course for biologists.

2017 — **Pasteur Institute of Paris**, *Research Internship*, Bioimage Analysis Unit, LLTech SAS, Implementation of a Convolutional Neural Network for detecting cancerous areas in skin biopsies imaged with a Full Field OCT microscope developed by LLTech.

2015 — **Institut supérieur d'électronique de Paris (ISEP)**, *Signal, Image an Telecommunication Laboratory*, Erasmus+ Internship, Development of natural images reconstruction algorithm based on Compressed Sensing.

2015 — **EWI Institute, Wien, Austria**, *Summer Internship*, Web design and promotion.

Skills

Tools — Python *Keras TensorFlow Scikits Pandas NumPy SciPy Matplotlib Seaborn OpenCV Neptune.ai Jupyter etc.*

Java, C++, MATLAB, Linux, Git, SLURM, Singularity, LaTeX

Knowledge —
- Machine Learning, Convolutional Neural Networks, Classification
- Biomedical Imaging, Computer Vision, Compressed Sensing
- Data Analysis and Visualization
- Object Oriented Programming, Algorithmics, Scientific Writing

Languages

Romanian — native

English — fluent - C1 *Cambridge Certificate in Advanced English*

French — fluent - C1

Spanish — notions - A2

Interests

arts — music (blues, rock, jazz), theater

humanities — culture, ethics, linguistics

outdoors — hiking, travel

Publications

1. O. Thouvenin, J Scholler, **D. Mandache**, M-C. Mathieu, A. Ben Lakhdar, M. Darche, T. Monfort, C. Boccara, J-C. Olivo-Marin, K. Grieve, V. Meas-Yedid, E. Benoit, *Automatic Diagnosis and Biopsy Classification with Dynamic Full-Field OCT and Machine Learning*, Scientific Reports, 2021 (under review).

2. **D. Mandache**, E.Benoit, M-C. Mathieu, J-C. Olivo-Marin and V. Meas-Yedid, *Leveraging Global Diagnosis for Tumor Localization in Dynamic Cell Imaging of Breast Cancer Tissue Towards Fast Biopsying*, IEEE International Symposium on Biomedical Imaging (ISBI), Nice, France, 2021.

3. **D. Mandache**, E.Benoit, J-C. Olivo-Marin, V. Meas-Yedid, *Blind Source Separation in Dynamic Cell Imaging using NonNegative Matrix Factorization applied to Breast Cancer Biopsies*, IEEE International Symposium on Biomedical Imaging (ISBI), Nice, France, 2021.

4. D. Gonzalez, **D. Mandache**, J-C. Olivo-Marin, V. Meas-Yedid, *Icytomine : A User-Friendly Tool for Integrating Workflows on Whole Slide Images*, European Congress on Digital Pathology (ECDP), Warwick, UK, 2019.

5. **D. Mandache**, E. Dalimier, J. Durkin, A. C. Boccara, J-C. Olivo-Marin and V. Meas-Yedid, *Basal Cell Carcinoma Detection in Full Field OCT images using Convolutional Neural Networks*, IEEE International Symposium on Biomedical Imaging (ISBI), Washington, DC, 2018.

6. A. Akbari, **D. Mandache**, M. Trocan, B. Granado, *Adaptive saliency-based compressive sensing image reconstruction*, IEEE International Conference on Multimedia & Expo Workshops (ICMEW), Seattle, WA, 2016.

7. **D. Mandache**, A. Akbari, M. Trocan, *Image compressed sensing recovery using intra-block prediction*, IEEE 23rd Telecommunications Forum (TELFOR), Belgrade, Serbia, 2015.