Diana MANDACHE

PHD ENGINEER R&D

image & data analysis, machine learning, healthcare
«jeune docteur»

CONTACT

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in linkedin.com/in/diana-mandache

g+ publications on Google Scholar

SKILLS

Software Development *Python Tensorflow, Keras, Scikits, OpenCV, NumPy, SciPy, Pandas, Matplotlib, Seaborn, Neptune, Jupyter, etc.*
Linux, Git, HPC, Containers (Singularity, Docker)
Data Mining, Analysis, Visualization
Algorithms Convolutional Neural Networks, Classification, Multiple Instance Learning, Contrastive Learning, Compressed Sensing, Source Separation, etc.

LANGUAGES

Romanian native
English fluent - C1
French fluent - C1
Spanish basic - A2

INTERESTS

arts music, theater, comedy
humanities ethics, linguistics
outdoors hiking, travel

TRAITS critical thinking
curiosity
honesty

EXPERIENCE

R&D Engineer in Image Analysis | may 2018 - present

LLTech (medical device start-up), Paris, France

- developed interpretable aid-to-diagnosis models for user assistance
- actively engaged in the entire life-cycle of data prototype:
from data collection via clinical studies, building viable databases, defining requirements, model development & validation, communicating results
- co-inventor in 1 patent application

Research Intern | 2017

Institut Pasteur - Bioimage Analysis Unit, Paris, France

- investigated use of **CNN**s for cancer detection in new imaging modality
- authored 1 publication

Research Intern ERASMUS+ | 2015

Institut supérieur d'électronique de Paris (ISEP) - Signal, Image & Telecommunication Laboratory , Paris, France

- developed 2 natural images reconstruction methods in **Matlab**
- authored 2 publications

EDUCATION

PHD in Informatics | 2018 - 2022

delivered by *Sorbonne Université,* prepared at *Institut Pasteur & LLTech* (industry-oriented fellowship CIFRE), *Paris, France*

- Cancer Detection in Full Field Optical Coherence Tomography Images
- 2 **teaching** missions: mentored master's students on practical projects & guided practical work during intensive Python course for biologists
- authored 6 publications in tier-A conferences

Master of Science in Image Analysis | 2016 - 2017

Université Pierre et Marie Curie (UPMC) & Télécom ParisTech, France

- cursus in French, graduated with honors, merit scholarship
- implemented an image denoising **Java** plugin for Icy Platform

Bachelor of Engineering in Computer Science | 2012 - 2016

University of Craiova, Faculty of Automation, Computers and Electronics, Romania

- cursus in English, graduated 2nd, merit scholarship
- developed an analog electronic circuit simulator with **UI** in **Python**

PUBLICATIONS

D. Mandache, E. Benoit, J-C. Olivo-Marin and V. Meas-Yedid, *Cross-Modal Contrastive Learning for Robust Representation of the Extracellular Matrix in Static and Dynamic Full-Field OCT Images*, IEEE International Symposium on Biomedical Imaging (ISBI), Cartagena de Indias, Colombia, 2023.

D. Mandache, E. Benoit, Y. Badachi, J-C. Olivo-Marin and V. Meas-Yedid, *The Lifecycle of a Neural Network in the Wild : a Multiple Instance Learning Study on Cancer Detection from Breast Biopsies Imaged with Novel Technique*, IEEE International International Conference on Image Processing (ICIP), Bordeaux, France, 2022. DOI : 10.1109/ICIP46576.2022.9897596

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*, 2021. DOI : 10.21203/rs.3.rs-371207/v1

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.
DOI : 10.1109/ISBI48211.2021.9434110

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.
DOI : 10.1109/ISBI48211.2021.9434128

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.
DOI : 10.1007/978-3-030-23937-4_21

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. DOI : 10.1109/ISBI.2018.8363689

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.
DOI : 10.1109/ICMEW.2016.7574688

D. Mandache, A. Akbari, M. Trocan, *Image compressed sensing recovery using intra-block prediction*, IEEE Telecommunications Forum (TELFOR), Belgrade, Serbia, 2015. DOI : 10.1109/TELFOR.2015.7377574