LORENA LEON

Postdoc at CREATIS

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CONTACT INFORMATION

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RESEARCH INTERESTS

- Statistical Signal and Image Processing
- Bayesian Methods
- Multifractal Modeling and Analysis
- Machine Learning
- Multivariate Signal and Image Analysis
- Remote Sensing
- Biomedical Applications

EDUCATION

Ph.D. in Computer Science   **2019 - 2022**

IRIT Laboratory, University of Toulouse   *Toulouse, France*

Bayesian Estimation of the Parameters of the Joint Multifractal Spectrum of Signals and Images.

Advisors: J-Y. Tourneret and H. Wendt

Master of Science in Applied Mathematics: Numerical Analysis   **2016 - 2019**

University of Havana   *Havana, Cuba*

Classification of Mass Malignancy in Digital Mammography through Multifractal Analysis.

Advisor: A.M. León Mecías

Bachelor of Science in Mathematics   **2012 - 2016**

University of Havana   *Havana, Cuba*

A Probabilistic Model for Mobile Robot Self-localization.

Advisor: Y. Almeida Cruz

PUBLICATIONS

You can find the updated list on google scholar

Journal

1. *L. Leon, H. Wendt, J. -Y. Tourneret and P. Abry, "A Bayesian Framework for Multivariate Multifractal Analysis," in IEEE Transactions on Signal Processing, vol. 70, pp. 3663-3675, 2022*

Conferences

4. *H. Wendt, L. Leon, J.-Y. Tourneret and P. Abry, "Multifractal anomaly detection in images via space-scale surrogates," IEEE International Conference on Image Processing (ICIP), Bordeaux, France, Oct. 2022*

3. *L. Leon, H. Wendt, J.-Y. Tourneret, P. Abry, "Estimation du paramètre de multifractalité : régression linéaire, maximum de vraisemblance ou inférence Bayésienne," GRETSI Symposium Signal and Image Processing, Nancy, France, Sept. 2022.*

2. *L. Leon, H. Wendt, J.-Y. Tourneret and P. Abry, "A Comparison of Bayesian Estimators for the Parameters of the Bivariate Multifractal Spectrum," European Signal Processing Conference (EUSIPCO), Belgrade, Serbia, Aug. 2022.*

1. *L. Leon, H. Wendt, J.-Y. Tourneret and P. Abry, "Bayesian Estimation for the Parameters of the Bivariate Multifractal Spectrum," European Signal Processing Conference (EUSIPCO), Dublin, Ireland, Aug. 2021.*

HONORS AND AWARDS

CARMIN-IHP-CIMPA laureate   **Jan. 7th - Apr. 5th, 2019**

of "The mathematics of imaging" research program   *Paris, France*

The scientific program is available here

ACADEMIC APPOINTMENTS

Postdoc with Adrian Basarab   **2016 - 2019**
CREATIS, Université Claude Bernard Lyon 1   *Lyon, France*
Data science for Quantitative Acoustic Microscopy

Assistant Professor   **2016 - 2019**
University of Havana   *Havana, Cuba*
Mathematical Analysis, Linear Algebra, Numerical Analysis, Differential Equations

Junior Professor   **2014 - 2016**
University of Havana   *Havana, Cuba*
Calculus, Linear Algebra, Numerical Analysis

SCIENTIFIC ACTIVITIES

AI Tasting seminar at TorusAI   **Jav. 2023**
Talk: "A Bayesian Framework for Multivariate Multifractal Analysis of Signals and Images"   *Toulouse, France*

SIMUL seminar at CRAN lab   **Nov. 17th 2022**
Talk: "Bayesian Multivariate Multifractal Analysis with application to Drowsiness Detection"   *Nancy, France*

4th Statistical Learning for Signal and Image Processing (SLSIP) Workshop   **Oct. 2022**
Talk: "Multifractal Anomaly Detection in Images Via Space-Scale Surrogates"   *Cadaqués, Spain*

GdR Analyse Multifractal Workshop   **Sept. 2021**
Talk: "A Bayesian Framework for Bivariate Multifractal Analysis"   *Porquerolles, France*

ATTENDANCE AT SEASONAL RESEARCH SCHOOLS

InnEO Summer school   **Jul. 19th - 24th, 2021**
R&D Institute of Transylvania University   *Brasov, Romania*
Subjects include: *Machine Learning, Deep Learning and Earth Observation Applications. Practical sessions in Python and MATLAB. Open Science and Soft Skills development.*

Research school: Mathematics, Signal Processing and Learning   **Jan. 25th - 29th, 2021**
CIRM   *Marseille, France*
Subjects include: *Machine Learning, Signal Processing, Optimization, Reinforcement Learning, One Signal Processing View on Deep Learning. Practical sessions in Python.*

Winter School: The mathematics of Imaging   **Jan. 7th - 11th, 2019**
CIRM   *Marseille, France*
Subjects include: *Variational Methods and Convex Relaxation for Computer Vision, Practical Machine Learning for Imaging in Neuroscience, Sparsity in Imaging, Bayesian Methods in Imaging.*

II Winter School in Computer Science: CSHab2018   **Jan. 29th - Feb. 2nd, 2018**
University of Havana   *Havana, Cuba*
Subjects include: *Languages for Concurrency, Representation and Kernel Learning, Perspectives on Real-time Scheduling in the Wuthering Landscape of Parallel Computing.*

Winter School: Mathematics and Physics meet   **Feb. 26th - Mar. 3rd, 2017**
University of Havana   *Havana, Cuba*
Subjects include: *Tools for Signal Analysis and Quantum Physics, Semigroups and Spectral Theory.*

TECHNICAL SKILLS

Languages: Matlab, Python   **Technologies/Frameworks**: LaTeX,   Linux, GitHub, Microsoft Office

LANGUAGES

Spanish: Native proficiency   **English**: Full professional proficiency   **French**: Limited working proficiency