

SONIA TABTI, PHD



Phone Number: +33 6 28 94 65 92

Email: soniatabti@gmail.com

Website: <https://sonia.wp.imt.fr/>

Location: Bordeaux, France

HIGHLIGHTS

- . I successfully supervised the data science aspects of several proof of concepts and products' development. In this context, I tackled complex industrial artificial intelligence use cases (water management, manufacturing, nuclear energy, ...), especially in Computer Vision
- . My contributions to the design of technical proposals for sales activities always allow to be shortlisted to gain prospect clients' contacts
- . I have published and presented many research papers at national and international conferences
- . I was preselected among seven other women in France for the "woman engineer in artificial intelligence award" organized by Challenges magazine on March 2023
- . 2020, 2021, 2023: I co-authored and presented the work done on various projects at Fieldbox at the DATAQUITAINE regional conference
- . I have been invited by the IEEE signal processing students' association of Bordeaux to present the work done in my research team to tackle industrial AI challenges and take part to a round table dealing with women in tech in May 2022
- . At the NAIA.R conference, I have been invited by Suez to take part to a round table dealing with the impact of AI in water management in December 2021

SKILLS

- . Applied Mathematics, Machine Learning, Artificial Intelligence (AI), Computer Vision
- . Complex problems understanding and solving skills
- . Great communication skills to any profile (from technical to non-technical)
- . Application of a rigorous scientific methodology while ensuring project delivery on time
- . Strength of proposition, leadership and mentoring
- . Data: images, videos, tabular data, time series, point clouds
- . Programming languages: Matlab, Python, notions in C/C++
- . Code versioning: subversion, Gitlab
- . Tools: LateX, Libre/Microsoft Office
- . OS: Linux (Ubuntu), Windows
- . Languages: french (mother tongue), english, arabic

EXPERIENCE

Fieldbox : AI for industry, Bordeaux, France

2019 – 2024

- . In 2023, I became **Head of the industrial AI Research (AI-R) team**
- . From 2021 to 2022, I officially became the leader of the AI R&D team
- . From 2019 to 2021, I was a lead data scientist, co-founder of an AI R&D team

- . Among my missions:
 - . Definition of the AI-R roadmap
 - . Work on various research topics applied to industrial use cases (eg: imbalanced machine learning, predictive maintenance using sensor data, drift detection on sensor data with variational autoencoders, object detection, image classification, segmentation, interpretability, OCR, ...)
 - . Technical and scientific watch
 - . Supervision and management of team members
 - . Write research papers and participate to conferences
 - . Definition of internships topics and supervision of interns
 - . Leading clients projects, especially in Computer Vision, from use case formulation, data collection, and modeling to deployment
 - . Support presales and recruitment teams
 - . Creation and edition of the internal tech newsletter in 2020

Post-doctorate fellow at the GREYC lab, Caen, France

2017 – 2018

- . Collaborators: Julien Rabin and Abderrahim Elmoataz
- . Topic: Graph signal processing on images and 3D colored point clouds with variational approaches
- . Application: heritage preservation thanks to scanning art objects
- . Organization of a mini-symposium at the SIAM conference on Imaging Science

Post-doctorate fellow at University Federico II, Naples, Italy

Sep 2016 – Dec 2016

- . Collaborators: Luisa Verdoliva, Giovanni Poggi (from the DIETI)
- . Topic: Dictionary learning with a sparse prior to remove speckle from synthetic aperture radar (SAR) satellite images

Teaching and research position at Université Paris Descartes

2015 – Sep 2016

- . While finishing writing my thesis manuscript, I was a teaching assistant for various courses of the Mathematics Bachelor
- . Courses: Mathematics and Calculus, Linear Algebra, Signal processing projects supervision

PhD candidate at the LTCI, Télécom Paris

2012 – 2016

- . Collaborators: Florence Tupin, Loïc Denis, Charles Deledalles
- . Topic: Build new sparse models and Gaussian-Mixture models with invariance properties dedicated to satellite SAR images
- . Application: SAR image restauration and classification

EDUCATION

- . **PhD at Télécom Paris** on applied Mathematics to SAR image restauration, 2016
- . **Master of Mathematics, Computer Vision and Machine Learning** (known as the MVA in France) at Ecole Normale Supérieure Paris-Saclay (ENS Cachan at the time), 2012
- . **Bachelor in Mathematics, Computer Science and Applications**, Université Paris Descartes, 2010

OTHER ACTIVITIES

- . 2023: I did an intervention at a french middle school to promote women working in tech thanks to the orientation day organized by the association Elles bougent
- . 2020: In the context of an event organized by the AMIES association (promoting Maths in industry) and the University of Bordeaux, I supervised a group of 3 PhD students and 1 young doctor to work intensively for a week on a scientific question I defined and worthy of interest for Fieldbox. We managed to publish a technical report on a new data augmentation technique dedicated to small multivariate time series
- . 2020: I was a member of a scientific committee to provide feedback on the Data science Master's program at the Bordeaux Ynov Campus
- . 2014: I was the representative of the PhD candidates in the department council of the LTCI lab at Télécom Paris
- . 2013, 2014: I participated to orientation events for Mathematics students at Université Paris Descartes