# SONIA TABTI, PHD  in

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## HIGHLIGHTS

- 12 years of experience in Machine learning and Computer Vision
- As AI team leader, I successfully supervised 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
- As head of AI Research, I have supervised, published and presented many research projects at national and international conferences
- My contributions to the design of technical proposals for presales activities always allow to be shortlisted to gain prospect clients' contracts
- I was preselected among seven other women in France for the "woman engineer in artificial intelligence award" organized by Challenges magazine on March 2023
- I was invited to give a talk at the Generation AI conferences (API days) at Paris La-Défense in December 2024 about the workflow I developed to semi-automate image labeling thanks to Vision Language Models
- 2020, 2021, 2023, 2025: I co-authored and presented the work done on various projects 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

## SKILLS

- Applied Mathematics, Machine Learning, Artificial Intelligence, Computer Vision, LLMs
- 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, text, point clouds
- Programming languages: Matlab, Python, notions in C/C++
- Code versioning: subversion, Gitlab, Github, Azure repos
- Tools: LateX, Libre/Microsoft Office
- OS: Linux (Ubuntu), Windows
- Languages: french (mother tongue), english, arabic

**Freelance since January 2024, here are my main missions :**

**Cali Intelligences : Computer Vision for the retail industry, Bordeaux,
June 2024 – Present**
- As an R&D AI Consultant: Punctual expertise for new models' development or new products' launches
- Developed a workflow to semi-automate image labeling for hidden faces detection use case on videos, in order to alert the store's manager and avoid potential robbery

**ACC : European batteries for electric cars, Bordeaux               Oct 2024 – March 2025**
- As the AI Teach lead: Supervision of an AI team composed of 3 data scientists and 1 ML engineer
- Contributed to 3 use cases (2 predictive models on tabular data, 1 defect detection on images)
- Did the technical framing of two critical projects (one dealing with an advanced RAG system and one dealing with defect detection on 3D scans)
- I improved the agile methodology of the team

**AI Forensics, NGO, Making Big data accountable, full remote       Jan 2024 – Sep 2024**
- As an AI Researcher: Supervision of the NGI Search project on Large Language Models-based search engines adversarial-audit
- Supervision of the development of the data labeling infrastructure for the European elections' integrity project run by AI Forensics

**Fieldbox : AI for industry, Bordeaux, France                       2019 – 2023**

- 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 and squad leader for the Computer Vision clients' projects
- 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, segmentation, image classification, depth estimation, interpretability, OCR, natural language processing...)
  - 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**, Universite Paris Descartes, 2010

## OTHER ACTIVITIES

- I am regularly interviewed to talk about my background and my expertise in AI, see this [Youtube playlist](#)

- 2023, 2025: I did interventions at french middle schools to promote women working in tech thanks to the orientation day organized by the association Elles bougent and Les Intrépides de la Tech

- 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 a climate change context in December 2021

- 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 respresentative of the PhD candidates in the department council of the LTCI lab at Télécom Paris