



ROXANE LEDUC

PHD STUDENT

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📍 Bordeaux (France)

PROFIL

After graduating as an engineer in Mathematical Engineering from INSA Rouen, I am currently pursuing a PhD in Bordeaux (Thales/IMS Lab.). My research focuses on object detection using polarimetric airborne radar, at the intersection of signal processing and statistics, with the goal of contributing both to theoretical advances and practical applications.

EDUCATION

TECHNISCHE UNIVERSITÄT DRESDEN

Faculty of Computer Science (computer vision, machine learning, mathematical biology, cryptography)

2023 - 2024

INSA ROUEN-NORMANDIE

Mathematical Engineering Department
2019 - 2024

HIGH SCHOOL JULES VERNE, NANTES

French Scientific Baccalauréat with honors
(High School Diploma)
2016 - 2019

TECHNICAL SKILLS

- Programming languages: C, C++, Fortran, Java, Pascal, Prolog, Python
- Data mining: Matplotlib, NumPy, scikit-learn, SciPy, Pandas
- Scientific software: Matlab, Octave, R
- Graphic interface: SDL (Simple DirectMedia Layer), AWT/SWING
- Operating system: Linux (Ubuntu), Windows
- Shell script: bash, ksh

SOFT SKILLS

- Travel (AT, CH, DE, DZ, EG, ES, IS, IT, JE, LI, MC, NO, PT, UK, USA, MA)
- Rock climbing, horseback riding
- Eloquence training
- Co-author of a website dedicated to aerodynamics: <https://aeronautiqueetbiomimetisme.home.blog/>
- Co-author of the short story "La Porte" published in the collective book entitled "Derrière la porte -- Hinter der Tür" (ISBN 978-2-36775-205-1)

CERTIFICATIONS

- Certification TOEIC -- Certificate of Studies, St Brelade's College, Jersey, 2018 score 915, 2023
- Certification SST, 2023 Deutsches Sprachdiplom, CEFR, 2016
- Certification PIX, 2020

WORK EXPERIENCES

THALES DMS FRANCE & IMS LABORATORY, BORDEAUX (SINCE NOV. 2024)

PhD Student: Object detection using polarimetric airborne radar
Use of statistical tools to model complex physical phenomena necessary for object detection.

Supervisors: A. Giremus and E. Grivel (Pr. at IMS), A. Gilliot, Y. Veyrac and V. Corretja (Thales DMS France).

→ Part-time teaching assistant for tutorials and lab sessions at Bordeaux INP and University of Bordeaux (Optimisation, Probability, Signal Processing, Filtering and Estimation).

Publications:

R. Leduc et al. "Apport des copules pour améliorer la détection de cibles à l'aide d'un radar polarimétrique", GRETSI 2025

NAVAL GROUP (DCNS), SAINT-TROPEZ (APRIL - SEPT. 2024)

Intern: Tracking algorithms for autonomous vehicles
Implementation and evaluation of tracking algorithms for autonomous vehicles.

LE FÉMININ PLURIEL, RABAT (MARS 2024)

English Teacher

Teaching English to women for a fortnight as part of a volunteer programme in Rabat.

COMMISSARIAT À L'ÉNERGIE ATOMIQUE (CEA), PARIS-SACLAY (OCT. 2023 - FEB. 2024)

Intern: Introduction to the principles of quantum algorithms
Study of Shor's algorithm and its implementation method on a logic gate QPU.

INSTITUT DE MATHÉMATIQUES DE BORDEAUX (IMB), BORDEAUX (JUNE-AUG. 2023)

Intern: Image processing using convolutive neural networks
Use of deep learning techniques to transfer color between two images.

Publication:

R. Leduc et al. "Non-local Matching of Superpixel-based Deep Features for Color Transfer and Colorization", IPOL Journal (2024)

NEW YORK UNIVERSITY (NYU), NEW-YORK (JUNE-AUG. 2022)

Intern: Simulation of epidemic propagation
Comparison of curve fitting algorithms using North American datasets.