

Adh mar de Senneville

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N  le 10 Juillet 2001

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EDUCATION

PhD - Computer Vision

Centre Borelli, ENS Paris-Saclay, France

Few-shot Learning, Multimodality, Interpretability

2025 - ?

Master 2 MVA

ENS Paris-Saclay, France

GPA: 17.6/20

2023 – 2024

- Time Series, Convex Optimization, Deep Learning, Signal Processing, Remote Sensing, Reinforcement Learning

Aerospace Engineering

ESTACA, France

Valedictorian

2019 – 2023

- Mathematics and Computer Science, Control and Systems, Mechanics and Energetics, Aerospace Systems

International Semester

University of Southampton, UK

GPA: 4.0

2023

- Deep Learning Technologies, Computational Aerodynamics, Orbital Mechanics, Hypersonic Gas Dynamics

PROFESSIONAL EXPERIENCE

Research Internship

NASA Jet Propulsion Laboratory, USA

Deep Learning and Signal Processing

May – Oct 2024

- Designed new deep-learning models for interference detection and mitigation in satellite radio signal.
- Advisor: Zaid J. Towfic, *Electrical Engineer*

Research Internship

CNES Toulouse, France

AI and Thermal Control

Jun - Sep 2023

- Applied genetic algorithms and thermal modeling tools to enhance spacecraft simulation accuracy.
- Advisor: Andre Maxime, *Thermal Engineer*

AI Consultant - NLP

e-Territoire, France

AI Integration for automated labeling and better search engine

2023 – 2024

AI Consultant - Computer Vision

Aerobat, France

Computer Vision for Drones

2023 – 2024

COMPETITIONS

Dassault Challenge

1st Place (2022–2023)

Developed an innovative Tail-Sitter drone for agricultural assistance.

with Dassault Aviation

- Image Processing, SLAM, Aerodynamic Optimization, Bicopter Control.

Safran Challenge

1st Place (2021–2022), **2nd Place** (2020–2021)

Programmed drones for speed racing and terrain/object reconnaissance.

with Safran

- YOLO, SLAM, EfficientNet, Python, C++.

EDTH Hackathon

3rd Place/34 (November 2024)

Built a functional drone for anti-helicopter missions in 24 hours.

with Helsing and others...

- Audio Signal Processing, Optical Tracking, Deep Learning.

ISAE Challenge

Applied deep reinforcement learning for autonomous drone racing.

3rd Place (2022–2023)

with ISAE group

- Proximal Policy Optimization, Multi-Sensor Fusion, Computer Vision, Simulation.

PUBLICATIONS

1. Adhémar de Senneville, Dennis Ogbe, Zaid Towfic. **Machine Learning for Interference Detection and Mitigation on Space Telecom Software-Defined Radio Signals.** *Small Satellite Conference 2025, Session I: Advanced Technologies 1 – Research & Academia, Salt Lake City, UT, August 12, 2025.*
2. Adhémar de Senneville, Xavier Bou, Jean-Louis Bonne, Nicolas Dumelie, Rafael Grompone, Thibaud Ehret, Gabriele Facciolo. **Towards Large Scale Geostatistical Methane Monitoring with Part-based Object Detection.** *Proceedings of the IEEE/CVF International Conference on Computer Vision (ICCV) Workshops, October 2025.*
3. Adhémar de Senneville, Xavier Bou, Jérémy Anger, Rafael Grompone, Gabriele Facciolo. **Unlocking Few-Shot Capabilities in LVLMS via Prompt Conditioning and Head Selection.** *European Conference on Computer Vision (ECCV), September 2026.*

Additional Information

HONORS & DISTINCTIONS

Best Paper Award, ICCV SEA Workshop (Sustainability with Earth Observation & AI) 2025

Awarded for *Towards Large Scale Geostatistical Methane Monitoring with Part-based Object Detection.*

Jury Member Datacraft Awards 2025

The Datacraft Awards recognize the best projects from French companies in AI.

- Alongside Nicole El Karoui (Mathematician, Sorbonne & École Polytechnique), Amal El Fallah Seghrouchni (Director of the Ai Movement, UNESCO Ethics Commission Member), and Maylis Ferrère (Director of BPI France)

IDEX Academic Excellence Scholarship Laureate 2024

Awarded IDEX scholarship for academic excellence, supporting international experiences.

- Merit-based scholarship granted to students pursuing a master's degree at Université Paris-Saclay.

Vice President SIERA Robotics & Informatics Association 2022-2023

Led an association of over 50 members, managing budgets and innovation projects.

Entrepreneur First (EF) - W24 Grad Oct – Dec 2024

EF is a global talent investor that helps exceptional individuals build deep tech startups.

SELECTED PROJECTS

Visual Navigation System Personal Project

Designed autonomous GPS replacement using satellite imagery and real-time data fusion. 2023

- Deep 3D computer vision techniques for positioning. Optimized multi-sensor signal processing.

Model Rocketry Personal Project

End-to-end design, simulation, and construction of model rockets. 2019-2023

- From CAD design to launch. 3D simulation framework in MATLAB (aerodynamic, mechanical, and electrical)

Latent Play - VST Personal Project

A VST plugin leveraging neural synthesis for infinite control over sample packs. 2024

- Deep learning-based audio synthesis plugin. Custom feature control in latent space using convex optimization.

DDSP WaveShaper

Academic Project

Adapted the FL-Studio WaveShaper plugin into a highly expressive, differentiable PyTorch version.

2024

- Differentiable WaveShaper using parametric interpolation, with a low parameter count.

Soft-DTW in PyTorch

Academic Project

PyTorch implementation of Soft Dynamic Time Warping (Soft-DTW) for gradient-based optimization

2024

- Optimized Soft-DTW for applications in barycenter averaging, K-Means clustering, and anomaly detection.