Amar Meddahi

amar.meddahi1@gmail.com Paris Area https://amarmeddahi.github.io/
Born July 2000 | French Citizen | Fluent in French & English

Work Experience

TotalEnergies **Mar. 2023 – Present**
Doctoral Researcher (full-time) | Dec. 2023 – Dec. 2026 *Paris Area*

- Designing real-time data fusion pipelines combining all-sky images and satellite data for 3D cloud reconstruction and improved solar irradiance retrieval for PV power applications.
- **Selected publications**: *Solar RRL* (2025); *Solar Energy* (under review).
- **Invited talks**: EU PVSEC 2024 (Vienna); ISF 2025 (Beijing); IEA PVPS Task 16 (4 invited talks).
- Co-supervised a 6-month Master's thesis on image-based cloud property retrieval (2024).

R&D Engineer Intern (full-time) | Mar. 2023 – Nov. 2023

- Developed a deep learning–based solar forecasting system using sky images and ground measurements.
- Reduced GHI RMSE by **55%** compared to commercial baselines at a 5 min forecast horizon.
- Internship project led to a **fully funded 3-year industrial PhD** at TotalEnergies.

Thales **Jun. 2022 – Sep. 2022**
R&D Engineer Intern (full-time) *Toulouse*

- Developed a recommender system for personalized software repository discovery.
- Deployed the system into the internal GitLab platform, serving **3,000+ users** with **80% positive feedback**.
- Nominated as **"Top Profile"** by internship supervisor for visibility across the Group.

Education

Mines Paris – PSL **Dec. 2023 – Dec. 2026**
Ph.D. in Energy and Process Engineering (in progress) *Paris Area and Sophia Antipolis*

- Industrial PhD (CIFRE) with TotalEnergies; supervised by Prof. Philippe Blanc.
- Awarded **3rd place out of 70+ PhD candidates** at the 9th Pierre Laffitte Prize (2025).
- Selected for international research programs in Duisburg (Postdocs to Innovators, 2024) and Budapest (EELISA PhD Symposium, 2025).

ENSEEIHT **Sep. 2020 – Sep. 2023**
Ingénieur ENSEEIHT – Informatique et Télécommunications (Master's level) *Toulouse*

- Double degree: research-oriented M.Sc. in Computer Science, University of Toulouse (2022/2023).
- Erasmus exchange: Computer Science, University of Birmingham (Fall 2021).

Skills & Interests

- **Programming & Tools:** Python (expert); OpenCV, NumPy, Pandas, pvlib, scikit-learn; Git; LaTeX.
- **Domains:** Remote sensing; solar radiation and energy meteorology; atmospheric science; computer vision; deep learning; scientific computing.
- **Data & Sensors:** Pyranometers; all-sky imagers; cloud lidar and radar; wind profilers; geostationary satellites (EUMETSAT MTG); ERA5 reanalysis.
- **Interests:** Mountaineering (ski touring, trekking); running (10K Nice 2025); art exhibitions; cinema.