

Olivier D'Hondt

Data Scientist and Remote Sensing Expert

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Professional Summary

Data Scientist specialized in Remote Sensing and Geospatial Analysis with over 15 years of expertise in developing advanced algorithms for satellite data analysis and Earth Observation applications. Proficient in Python and Machine Learning frameworks, with a strong track record in leading innovative projects and contributing to interdisciplinary teams.

Experience

Oct 2023 – **Open Source Developer, Independent, Remote.**

- Present
 - Developed **EO-Tools**, a Python toolbox for Earth Observation, enabling advanced data processing such as interferometric processing of Sentinel-1 data and tile mosaicking of Sentinel-2 images.
 - Implemented user-friendly features for data discovery, download, and visualization.
 - Distributed software via conda packages and Docker containers, ensuring broad accessibility.

Jan 2022 – **Senior SAR Scientist, Floodbase, Remote (USA).**

- Sep 2023
 - Led the development of flood mapping algorithms utilizing high-resolution SAR imagery.
 - Directed radar science initiatives, evaluating commercial radar satellite market.
 - Developed algorithms for new radar satellites, enhancing urban flood mapping capabilities.

Jul 2018 – **Research Associate, Computer Vision & Remote Sensing Group, Technical University of Berlin, Germany.**

- Aug 2021
 - Principal Investigator for the "TomoSAR II" project, focusing on 3D object reconstruction using tomographic SAR data and deep learning techniques.
 - Contributed to the MOUNTS platform for automated volcano activity monitoring.

Mar 2015 – **Research Associate, Computer Vision & Remote Sensing Group, Technical University of Berlin, Germany.**

- Jun 2018
 - Principal Investigator of the "TomoSAR" project, focusing on machine learning-based land cover classification from 3D tomographic information.
 - Worked on restoring 3D point clouds from tomographic SAR images.
 - Participated in geomorphological characterization of regions in Fildes Peninsula, Antarctica (SOAR-EU2 project).

Sept 2011 – **Research Associate, Computer Vision & Remote Sensing Group, Technical University of Berlin, Germany.**

- Aug 2014
 - Worked on the "AnalySAR II" project, focusing on fusion of polarimetric and tomographic SAR information for 3D segmentation.
 - Developed bilateral filtering techniques for speckle reduction in polarimetric SAR images.

- Nov 2007 – **Research Engineer**, *Barcelona Media Innovation & Research Center*, Barcelona,
Dec 2010 Spain.
- Developed interactive segmentation and object tracking tools for video.
 - Specialized in motion layer extraction in video, contributing to the i3media project.

Education

- 2006 **PhD in Signal Processing**, *University of Rennes 1*, France.
- 2002 **Master's Degree in Electrical Engineering (Image Processing)**, *University of Rennes 1*, France.

Technical Skills

- Programming Languages Python, C++, Matlab
- Libraries / Frameworks Numpy, Tensorflow, Geopandas, GDAL/Rasterio, Xarray, Dask
- Tools Git, Pytest, Docker, Jupyter, VSCode, QGIS, Google Earth Engine, Google Cloud Dataflow
- Languages French (Native), English (Fluent), Spanish (Fluent), German (Basic)

Key Achievements

- Developed a new statistical model for spatially anisotropic texture in SAR images during PhD.
- Successfully led multiple projects funded by the German Research Foundation (DFG).
- Achieved a "Statement of Accomplishment with Distinction" in Stanford's "Mining of Massive Datasets" online course.

Professional Activities

- Supervision Supervised multiple Master's theses on SAR data classification and filtering techniques.
- Lectures Delivered invited lectures on 3D reconstruction from SAR data at ENS Paris Saclay and University of Rennes 1.