

# Olivier D'Hondt

*Remote Sensing and Image Processing Engineer*

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📄 odhondt.github.io

## Education

- 2006 **PhD in Signal Processing**, *University of Rennes 1*, France.
- 2002 **Master's Degree in Electrical Engineering, majoring in Image Processing**, *University of Rennes 1*, France.
- 2000 **Bachelor's Degree in Electrical Engineering**, *University of Rennes 1*, France.
- 1998 **DEUG Sciences de la Matière (two-year university degree in Physics)**, *University of Rennes 1*, France.

## Experience

- Oct. 2023 – **Open Source Developer.**
  - Now Development of EO-Tools a python toolbox for Earth Observation.
    - Developing features such as: interferometric processing of TOPS Sentinel-1 data, tile mosaicking of Sentinel-2 images, tools for easy discovery, download and visualization of Sentinel products.
    - Distributing the software as a conda package and a docker container via Github: [https://github.com/odhondt/eo\\_tools](https://github.com/odhondt/eo_tools)
    - Documenting the software with mkdocs and readthedocs, unit testing with pytest.
- Jan. 2022 – **Senior SAR (Synthetic Aperture Radar) Scientist**, *Floodbase*, USA (remote).
- Sep. 2023 Development of flood mapping algorithms from high-resolution SAR imagery.
  - Leading radar science for public and commercial sensors.
  - Developing algorithms for new radar satellites and evaluating the radar satellite market.
  - Contributing to urban flood mapping.
- Jul. 2018 – **Research associate**, *Computer Vision & Remote Sensing Group*, *Technical University of Berlin*, Germany.
- Aug. 2021 Principal Investigator of the "TomoSAR II" project funded by DFG (German Research Foundation).
  - Deep-learning based extraction and reconstruction of 3-D objects in tomographic SAR (Synthetic Aperture RADAR) data
  - Participation in the development of the MOUNTS platform to automatically monitor volcano activity with Sentinel data (ESA)
- Mar. 2015 – **Research associate**, *Computer Vision & Remote Sensing Group*, *Technical University of Berlin*, Germany.
- Jun. 2018 Principal Investigator of the "TomoSAR" project funded by DFG (German Research Foundation).
  - Machine learning based land cover classification from 3-D tomographic information
  - Restoration of 3-D point clouds from tomographic SAR images
  - Participation in the 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 Participation in the "AnalySAR II" project funded by DFG (German Research Foundation).
  - Fusion of polarimetric and tomographic SAR information for 3-D segmentation
  - Bilateral filtering of speckle in polarimetric SAR images

- Nov. 2007 – **Research engineer**, *Barcelona Media Innovation & Research Center*, Barcelona, Spain.
- Dec. 2010 Participation in the “i3media” project funded by the CENIT program (2007-2010).  
 ◦ Interactive segmentation and object tracking in video  
 ◦ Motion layer extraction in video
- Mar. 2006 – **Postdoctoral researcher**, *Active Remote Sensing Lab, Polytechnic University of Catalonia*,  
 Aug. 2007 Barcelona, Spain.  
 Participation in a CPER project with IFREMER and Géosciences Rennes.  
 ◦ Validation of a nonstationary texture model for SONAR and SAR images
- Sept. 2002 – **PhD candidate**, *Institute of Electronics and Telecommunication of Rennes, University of*  
 Feb. 2007 *Rennes 1*, France.  
 Topic: modelling nonstationary texture in SAR images.  
 ◦ Introduction of a new statistical model for spatially anisotropic texture  
 ◦ Development of numerical model inversion methods

## Skills

### Soft skills

Communication – teaching – agile methodology – grant proposal writing – intercultural environment – critical thinking – intellectual curiosity

### Computer

Programming Python, C++, Matlab  
 Libraries Numpy, Tensorflow, Geopandas, GDAL/Rasterio, Xarray, Dask  
 Tools Git, Pytest, Docker, Jupyter, VSCode, QGIS, GCS dataflow

### Languages

French	Native	English	Fluent
Spanish	Fluent	German	Basic

## Scientific activities

### Student Supervision

Master's theses ◦ Classification of tomographic SAR data  
 ◦ Riemannian distance based nonlocal filtering

### Invited lectures

Jan. 2020 ENS Paris Saclay – 3-D reconstruction from tomographic SAR data: From low- to high-level information processing

Sept. 2019 University of Rennes 1 – Information processing for 3-D characterization using Synthetic Aperture Radar tomography

### Prizes & distinctions

2014 Mining of Massive Datasets, online course of Stanford University (USA). Grade: “Statement of Accomplishment with Distinction”

2008 Torres Quevedo Fellowship from the Spanish Ministry of Education and Science

2004 Student prize for a paper at the EUSAR 2004 symposium

### Publications

A complete list is available on my website <https://odhondt.github.io>