Email damien.robert@ign.fr | **Website** drprojects.github.io | **Github** drprojects | **ORCID** 0000-0003-0983-7053 | **Scholar** Bmgo5wMAAAAJ | **Linkedin** damienrobert91

Damien Robert

PhD Student – 3D Deep Learning

Summary I am a PhD student in the CSAI team of the ENGIE Lab CRIGEN and the machine learning team STRUDEL of the LASTIG lab at IGN—the French Mapping Agency–under the supervision of Loïc Landrieu and Bruno Vallet. I am broadly interested in deep learning for real-world data and impactful applications, with a taste for approaches making deep learning research socially and environmentally beneficial, accessible and reproducible. My recent work focuses on multimodal and efficient learning on large-scale 3D point clouds.

Positions

2020 – Present : *PhD student*, ENGIE Lab CRIGEN - LASTIG, IGN/ENSG
Multimodal, multi-task learning on large 3D point clouds
Advisors: Loïc Landrieu and Bruno Vallet

2017 - 2020 : *R&D Engineer*, SIRADEL, ENGIE *2y 8m*
Deep Learning on large-scale, terrestrial/aerial, indoor/outdoor 3D/2D data

2017 : *Co-Founder*, Inspirama *1y*
Website gathering book recommendations from inspiring people

2015 : *R&D Intern*, Dassault Systemes *6m*
Dimensionality reduction and dynamic system modeling

2014 : *R&D Intern*, Dassault Systemes *6m*
UX design

Education

2022 : International Computer Vision Summer School *Sicily, Italy*
CV courses by world-renowned experts in academia and industry

2011 - 2015 : Ecole Centrale Lyon, MSc *Lyon, France*
Mathematics, Computer Science, Mechanics, Signal Processing, Automation

2017 : CNRS AI Fall School *Lyon, France*
Multi-disciplinary course for AI students and researchers

2017 : Udacity, Machine Learning Engineer Nanodegree *MOOC*
Machine learning, mathematics, computer science

2015 : Coursera *MOOC*
Introduction to Machine Learning

2009 - 2011 : Chateaubriand High School *Rennes, France*
Preparation course for exams to enter French engineering schools

2006 - 2009 : Victor & Helene Basch High School *Rennes, France*
High School Diploma with honours, specialized in Sciences and English

Research Experience

Publications

2023

In review : Damien Robert, Hugo Raguet, Loic Landrieu, *Scalable 3D Panoptic Segmentation with Superpoint Graph Clustering*

2023

ICCV : Damien Robert, Hugo Raguet, Loic Landrieu, *Efficient 3D Semantic Segmentation with Superpoint Transformer*

2022

CVPR best paper finalist : Damien Robert, Bruno Vallet, Loic Landrieu, *Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation*

Reviewing

2023

CVPR, CVPRW Earth Vision

2022

ISPRS, CVPRW Earth Vision

Teaching

2023 : ENSG-IGN *(M2 - 13 hours)*

Course on Deep Learning for Remote Sensing

2022 : XXIV ISPRS Congress *(Researchers - 1 day)*

Tutorial on Deep Learning for Remote Sensing

2022 : ENGIE CRIGEN lab *(Researchers - 1 day)*

Tutorial on 3D Deep Learning, Torch-Points3D & DeepViewAgg

2022 : ENSG-IGN *(M2 - 9 hours)*

Course on Deep Learning for Remote Sensing

2020 : Ecole Polytechnique *(M1 - 12 hours)*

Course on Deep Learning for Computer Vision

Open-Source Repositories

drprojects/DeepViewAgg	194 ★	23
drprojects/superpoint_transformer	116 ★	15
drprojects/point_geometric_features	14 ★	2
drprojects/nora	7 ★	

Conferences and Invited Talks

Conference oral | Poster | Invited talk | Interview

2023

ICCV — *Paris, France*
Efficient 3D Semantic Segmentation with Superpoint Transformer

ETH Zürich, Photogrammetry and Remote Sensing lab — *Zürich, Switzerland*
Efficient 3D Semantic Segmentation with Superpoint Transformer

ENGIE CRIGEN lab — *Paris, France*
Efficient 3D Semantic Segmentation with Superpoint Transformer

Samp R&D lab — *Paris, France*
Efficient 3D Semantic Segmentation with Superpoint Transformer

University of Zürich, EcoVision lab — *Virtual*
Efficient 3D Semantic Segmentation with Superpoint Transformer

Valeo.ai — *Paris, France*
Efficient 3D Semantic Segmentation with Superpoint Transformer

2022

IGN, LASTIG lab — *Paris, France*
Self-Supervised Learning for Computer Vision

Bundesamt für Kartographie und Geodäsie (BKG) — *Paris, France*
Presenting IGN's research on large-Scale 2D and 3D Learning

International Computer Vision Summer School — *Sicily, Italy*
Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation

CV News — *New Orleans, US*
Interviewed by the CV News journal for its *Best of CVPR'22* issue

CVPR — *New Orleans, US*
Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation

Ecole des Ponts, IMAGINE lab — *Paris, France*
Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation

XXIV ISPRS Congress — *Nice, France*
Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation

Ecole Polytechnique, LIX lab — *Paris, France*
Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation

AI4GEO project seminar — *Virtual*
Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation

IGN-ENSG Research Days — *Paris, France*
Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation

GDR ISIS seminar — *Virtual*
Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation

2021

IGN-ENSG Research Days — *Virtual*
Multimodal learning on point clouds and images

Skills, Interests and Personal

Research Topics

- Computer vision
- Deep learning
- LiDAR data
- Large-scale 3D data
- Multimodal learning
- Efficient learning
- Superpoint-based learning

Tools

Python
PyTorch
PyTorch Lightning
PyTorch Geometric
Hydra
scikit-learn
Plotly
Weights & Biases
Blender
C++
Git
Latex
Linux

Languages

French	Native
English	Fluent
Spanish	Intermediate

International Experience

2015-2016	Backpacking
2014-2015	Providence, RI

Personal Interests