

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

Under review : Damien Robert, Hugo Raguet, Loic Landrieu, *Efficient 3D Semantic Segmentation with Hierarchical Superpoint Transformers*

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	183 ★	20 🍴
 drprojects/point_geometric_features	14 ★	2 🍴
 drprojects/nora	7 ★	

Conferences and Invited Talks

 Conference oral  Poster  Invited talk  Interview

2022

-  **IGN, LASTIG lab** *Paris, France*
Self-Supervised Learning for Computer Vision
-  **Bundesamt für Kartographie und Geodäsie (BKG)** *Invited, Paris, France*
Presenting IGN's research on large-Scale 2D and 3D Learning
-  **International Computer Vision Summer School** *Poster, Sicily, Italy*
Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation
-  **CV News** *Interview, New Orleans, US*
Interviewed by the CV News journal for its *Best of CVPR'22* issue
-  **CVPR** *Oral, New Orleans, US*
Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation
-  **Ecole des Ponts, IMAGINE lab** *Invited, Paris, France*
Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation
-  **XXIV ISPRS Congress** *Poster, Nice, France*
Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation
-  **Ecole Polytechnique, LIX lab** *Invited, Paris, France*
Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation
-  **AI4GEO project seminar** *Invited, Virtual*
Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation
-  **IGN-ENSG Research Days** *Poster, Paris, France*
Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation
-  **GDR ISIS seminar** *Invited, Virtual*
Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation

2021

-  **IGN-ENSG Research Days** *Oral, 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
- Segment-based learning
- Self-supervised learning

Tools

 Python
 PyTorch
 PyTorch Lightning
 PyTorch Geometric
 Hydra
 scikit-learn
 Plotly
 Blender
 C++
 Git
 LaTeX
 Linux

Languages

 French Native
 English Fluent
 Spanish Intermediate

International Experience

2015-2016  Backpacking
2014-2015  Providence, RI

Personal Interests

