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

Damien Robert

Deep Learning for Remote Sensing & Environment

Summary I am a postdoctoral researcher in the EcoVision lab at University of Zurich, collaborating with Jan D. Wegner. 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 efficient learning on large-scale 3D point clouds.

Positions

2024 – Now : *Postdoctoral Researcher*, EcoVision lab, University of Zurich
Deep learning for remote sening and environment
PI: Jan D. Wegner

2020 – 2024 : *PhD student*, ENGIE Lab CRIGEN - LASTIG, IGN/ENSG *3y 4m*
Efficient learning on large-scale 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

2024

3DV Oral (top 5.3% submissions) : Damien Robert, Hugo Raguet, Loic Landrieu, *Scalable 3D Panoptic Segmentation as Superpoint Graph Clustering*

PhD Thesis : Damien Robert, *Efficient Learning on Large-Scale 3D Point Clouds*. **Jury** : Sébastien Lefèvre, Cédric Demonceaux, Patrick Pérez, Siyu Tang, Duygu Ceylan, Loic Landrieu, Bruno Vallet

2023

ICCV (top 26.8% submissions) : Damien Robert, Hugo Raguet, Loic Landrieu, *Efficient 3D Semantic Segmentation with Superpoint Transformer*

2022

CVPR Best paper finalist (top 0.4% submissions) : Damien Robert, Bruno Vallet, Loic Landrieu, *Learning Multi-View Aggregation In the Wild for Large-Scale 3D Semantic Segmentation*

Reviewing

2024

ISPRS Journal of Photogrammetry and Remote Sensing, ICLR workshop ML4RS, ECCV, CVPR workshop Earth Vision

2023

CVPR, CVPR workshop Earth Vision

2022

ISPRS Journal of Photogrammetry and Remote Sensing, CVPR workshop Earth Vision

Teaching

2024 : UZH *(M2 - 5.5 hours)*

Course and labs on Attention, NeRFs, and Diffusion

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

Course and labs 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 and labs on Deep Learning for Remote Sensing

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

Course on Deep Learning for Computer Vision

Open-Source Repositories

drprojects/superpoint_transformer	301 ★	49
drprojects/DeepViewAgg	211 ★	22
drprojects/point_geometric_features	32 ★	4
drprojects/nora	17 ★	

Conferences and Invited Talks

📐 Conference oral 🖼️ Poster 🎙️ Invited talk 🎤 Interview

2024

📐 **3DV** — *Davos, Switzerland*
Scalable 3D Panoptic Segmentation as Superpoint Graph Clustering

2023

🎙️ **National Land Survey of Finland (NLS)** — *Paris, France*
Presenting IGN's research on large-Scale 2D and 3D Learning

🎙️ **Ecole des Ponts, IMAGINE lab** — *Paris, France*
Efficient Learning on Large-Scale 3D Point Clouds

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

🎙️ **ETH Zurich, Computer Vision and Geometry lab** — *Zurich, Switzerland*
Efficient Learning on Large-Scale 3D Point Clouds

🎙️ **ETH Zurich, Photogrammetry and Remote Sensing lab** — *Zurich, Switzerland*
Efficient Learning on Large-Scale 3D Point Clouds

🎙️ **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 Zurich, 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
- Remote sensing

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