✉ **Email**   🌐 **Website**   ⚙ **Github**   ⓘ **ORCID**   ⒼScholar   in **Linkedin**
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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 on efficient and scalable deep learning, forest structure analysis, and species distribution modeling.

Positions

2024 – Now : *Postdoctoral Researcher,* **EcoVision lab, University of Zurich**
Deep learning for remote sensing 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

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

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

2023

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

2022

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

👩🏽‍🔬 Supervision & Collaboration

PhD Students

Emilia Arens with Jan D. Wegner (UZH)
Johannes Dollinger with Jan D. Wegner (UZH)
Kaan Karaman with Jan D. Wegner (UZH)
Louis Geist with Loic Landrieu (ENPC)
Yuanwen Yue with Konrad Schindler (ETH) and Christian Rupprecht (Oxford)

Post-Doctoral Fellow

Elena Plekhanova (WSL)

Master Students

Valerio Schelbert (ETH)
Jackson Sunny (Polytechnique) with SAMP

🧧 Reviewing

2025

CVPR, CVPR workshop Earth Vision

2024

ISPRS Journal of Photogrammetry and Remote Sensing, ICLR workshop ML4RS, ECCV (outstanding reviewer), 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   702 ★   86 ⑂
 drprojects/DeepViewAgg   227 ★   25 ⑂
 drprojects/point_geometric_features   57 ★   5 ⑂
 drprojects/nora   35 ★

Conferences and Invited Talks

 Conference oral   Poster   Invited talk   Interview

2024

 3D Data Academy *YouTube*
Interview by Florent Poux and tutorial for Superpoint Transformer

 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
- Self-supervised learning
- Remote sensing
- Forest structure analysis
- Species distribution modeling
- Representation learning for macroecology
- EO data representation and compression

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
🇩🇪 German	Beginner

International Experience
2024-*Now*	🇨🇭	Zurich
2015-2016	🌍	Backpacking
2014-2015	🇺🇸	Providence, RI

Personal Interests

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