Corentin Sautier

PhD Student in Computer Vision

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Education

2022–Today **PhD student**, *valeo.ai & ENPC, Imagine*, Paris
Self-Supervised learning for multimodal point clouds and image data
Detailed achievements:
- Pioneered Image-to-Lidar distillation methods.
- Participated in 6 research projects leading to articles, including 3 at CVPR
- Reached 1st position on the most important LiDAR panoptic segmentation benchmark
- Developed better self-supervised methods on LiDAR point clouds.

2020–2021 **M2 in Applied Mathematics, Vision and Learning (Master MVA)**, *ENS Paris-Saclay*, Saclay
Courses in Deep Learning, 3D Computer Vision, Convex and Discrete Optimization, Computational Statistics, Optimal Transport, Random Matrix Theory, Point Cloud and 3D Modeling and Kernel Methods.

2017-2021 **Master's Degree in Science and Executive engineering**, *Mines Paristech*, Paris
Courses in Mathematics, Mechanics, Computer Science, Probability, Statistics, Physics, Automatics and Climate issues. Specialization in Robotics, Computer Vision and applied Mathematics. Projects in Deep Learning, Robotics, and 3D Reconstruction.

2018 **Research Exchange Semester**, *Massachusetts Institute of Technology*, Boston
Research in Monocular SLAM, and robust SLAM in variable environments. Attended courses and conferences in Computer Vision and Robotics.

2015-2017 **Preparatory Class in Mathematics and Physics**, *Lycée Louis Pasteur*, Neuilly-sur-Seine
Major courses in Mathematics and Physics, Minor courses in Computer Science and Engineering Sciences.

2015 **High School Diploma with high honors**, *Lycée Rocroy Saint Vincent de Paul*, Paris

Experience

Professional Experience

2022-2025 **Research scientist**, *valeo.ai*, Paris, France
Research position of my PhD, working on representation learning with the 3D team.

2021 **6-months Internship**, *valeo.ai*, Paris, France
Research focused on contrastive self-supervision for images and point clouds.

2020 **6-months Internship**, *IBM Research*, Tokyo, Japan
Research among a team in IBM's Tokyo Research Lab. The aim was to study combination of automatic planners with Deep Learning to apply Logic Programming to difficult or noisy problem setups.
Detailed achievements:
- Learned state-of-the-art in automatic planning and model-based reinforcement learning.
- Contributed to IBM's intellectual property with multiple patent applications.

2019–2020 **6-months Internship**, *Scio*, London, United Kingdom
Start-up specialized in automatic data extraction from unformatted documents. Built text and layout classifiers to improve parsing robustness. Carried out the transition from Keras to Pytorch for the main code.

Miscellaneous

2025–Today **Teaching Assistant**
Giving courses and practicals on C++

2024 **Ellis Winter School on Foundation Models.**, *UvA*, Amsterdam, Netherlands

2023–Today **Reviewer Duties**
Reviewer for international conferences and journals including CVPR, ICCV, ECCV, 3DV, WACV and TPAMI
Outstanding reviewer at ECCV 2024 & CVPR 2025

2020 **School Project**, *Mines Paristech*, Paris, France
3D Mesh reconstruction from Point Clouds, using Marching Cubes and implicit surface reconstruction

2019 **School Project**, *Mines Paristech*, Paris, France
LIDAR point cloud classification algorithm using convolutional Neural Networks (U-Net).

2015-Today **Other**
- Child Care for an autistic boy
- Personal Teacher for High School Students
- Management of an Organization, bringing fresh fruits and vegetables to students (20,000 € turnover)
- Instrumental practice of the Cello in an orchestra & of the Guitar
- Seasonal Employment & Blue-collar internship

Skills

Python Pytorch, Tensorflow, Numpy, Scipy, Regex, Cython and other standard libraries
C/C++ Standard libraries, OpenCV, Binding with Python
Other LaTeX, Git, OpenOffice & Microsoft Office, Linux
Languages **French** (native), **English** (fluent), **German** (basic)

Publications

2025 **Clustering is back: Reaching state-of-the-art LiDAR instance segmentation without training**, *Under review*, Corentin Sautier, Gilles Puy, Alexandre Boulch, Renaud Marlet, Vincent Lepetit
Highlight: best method on the official SemanticKITTI Panoptic segmentation benchmark.

2025 **UNIT: Unsupervised Online Instance Segmentation through Time**, *3DV 2025*, Corentin Sautier, Gilles Puy, Alexandre Boulch, Renaud Marlet, Vincent Lepetit
Highlight: unsupervised instance segmentation on very long sequences.

2024 **Three Pillars improving Vision Foundation Model Distillation for Lidar**, *CVPR 2024*, Gilles Puy, Spyros Gidaris, Alexandre Boulch, Oriane Siméoni, Corentin Sautier, Patrick Pérez, Andrei Bursuc, Renaud Marlet
Highlight: best performing, yet simpler method for distilling image models in 3D networks.

2024 **BEVContrast: Self-Supervision in BEV Space for Automotive Lidar Point Clouds**, *3DV 2024*, Corentin Sautier, Gilles Puy, Alexandre Boulch, Renaud Marlet, Vincent Lepetit
Highlight: state-of-the-art self-supervised contrastive method for outdoor LiDAR point clouds.

2023 **ALSO: Automotive Lidar Self-supervision by Occupancy estimation**, *CVPR 2023*, Alexandre Boulch, Corentin Sautier, Björn Michele, Gilles Puy, Renaud Marlet
Highlight: best self-supervised reconstruction method using surface estimation.

2022 **Image-to-Lidar Self-Supervised Distillation for Autonomous Driving Data**, *CVPR 2022*, Corentin Sautier, Gilles Puy, Spyros Gidaris, Alexandre Boulch, Andrei Bursuc, Renaud Marlet
Highlight: method that created the field of image-to-LiDAR distillation.

2020 **State Prediction in TextWorld with a Predicate-Logic Pointer Network Architecture**, *IBM Research Tokyo*, Corentin Sautier, Don Joven Agravante, Michiaki Tatsubori, KBRL at IJCAI-PRICAI 2020

2020 **Towards Logical Model-based Reinforcement Learning: Lifted Operator Models**, *IBM Research Tokyo*, Corentin Sautier, Don Joven Agravante, Michiaki Tatsubori, KBRL at IJCAI-PRICAI 2020