

# Souhail Hadgi

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**Final-year PhD Candidate in AI & Computer Vision at Ecole Polytechnique.** My research focuses on transfer learning for 3D data, with a proven track record of developing effective pre-training and fine-tuning strategies for shape analysis (classification, segmentation, retrieval) and cross-modal (image and text) applications.

## TECHNICAL SKILLS

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**Languages:** Python, SQL, MATLAB, R

**Frameworks:** PyTorch, TensorFlow, Scikit-learn

**Areas of Expertise:** Machine Learning, Deep Learning, 2D & 3D Computer Vision, Natural Language Processing, LLM, Generative Modeling, Computer Graphics, Optimisation

## EDUCATION

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### École Polytechnique

*PhD Student. Supervised by Prof. Maks Ovsjanikov*

France

Jan. 2023 – 2026

### École Normale Supérieure Paris-Saclay

*M2 Master: MVA (Mathematics, Vision, Learning). GPA: 4.0*

France

2022

### CentraleSupélec

*Master of Engineering: Major in Mathematics, Specialization in Data Science. GPA: 4.0*

France

2022

*Bachelor of Engineering*

2019

## FIRST AUTHOR PUBLICATIONS

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### PatchAlign3D: Local Feature Alignment for Dense 3D Shape Understanding

*Souhail Hadgi, Bingchen Gong, Ramana Sundararaman, Emery Pierson, Lei Li, Peter Wonka, Maks Ovsjanikov*

Arxiv PrePrint ([Link](#))

### Escaping Plato's Cave: Towards the Alignment of 3D and Text Latent Spaces

*Souhail Hadgi, Luca Moschella, Andrea Santilli, Diego Gomez, Qixing Huang, Emanuele Rodolà, Simone Melzi, Maks Ovsjanikov*

CVPR 2025 ([Link](#))

### To Supervise or Not to Supervise: Understanding and Addressing the Key Challenges of Point Cloud Transfer Learning

*Souhail Hadgi, Lei Li, Maks Ovsjanikov*

ECCV 2024 ([Link](#))

## EXPERIENCE

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### Research intern

May 2022 – Oct. 2022

*École Polytechnique*

- Analysis of several unsupervised pre-training approaches for 3D representation learning
- Adapted scene point-level contrastive learning approaches for 3D shape analysis

### Data Scientist Intern

Aug. 2020 – Jul. 2021

*DataScientest*

- Designed Computer Vision modules for a Deep Learning Curriculum
- Supervised Deep Learning applied projects
- Conceived the scientific content of Data Challenges
- Taught Deep Learning courses for cohorts of learners

## TEACHING

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**Analysis and Deep Learning on Geometric Data** — CSC\_53431\_EP

École Polytechnique (2024/2025)

**Machine Learning** — CSE204

École Polytechnique (2023/2024)

**Advanced Programming** — CSE102

École Polytechnique (2023/2024)

## PROJECTS

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### **Reconcile video predictions from multiple angles**

*Sicara*

- Created a TensorFlow pipeline that generates videos of highways corresponding to a different view angle from the initial viewpoint
- Optimized an auto-encoder architecture for image generation

### **Segmentation models for audio data**

*Ilwin Technology*

- Created an end-to-end PyTorch deep learning pipeline for Speaker Diarisation
- Trained and evaluated the diarisation pipeline on the TCOF dataset