

# David Pujol Perich

## Research Scientist

Curiosity-driven PhD researcher in Computer Vision and Multimodal AI, focusing on video understanding. I am also passionate about efficient and trustworthy AI, with experience spanning vision-language models, graph learning, and generative approaches.

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## WORK EXPERIENCE

### Visiting Researcher University of Bristol

09/2025 - 11/2025

#### Achievements/Tasks

- Investigated the robustness of VLMs against diverse or granular textual descriptions to solve the problem of video moment retrieval.

### Semester Project and Master Thesis EPFL, Switzerland

08/2021 - 08/2022

Lausanne, Switzerland

#### Achievements/Tasks

- Tackled the scalability bottleneck of Transformers by devising novel efficient attention mechanisms without sacrificing model performance.

### Machine Learning Researcher Barcelona Neural Networking Center

01/2020 - 08/2021

Barcelona, Spain

#### Achievements/Tasks

- Engineered IGNITION, a fast-prototyping framework for GNNs, leading to a funded European Project and a worldwide networking challenge.

## EDUCATION

### PhD in Computer Vision Universitat de Barcelona

09/2022 - 12/2025

Barcelona, Spain

#### Tasks

- Study the intersection of vision and language for video understanding (published at CVPR, ICCV, ICLR, WACV...)
- Enhanced model generalization and transferability across visual domains, language, or even tasks.

### Masters in research and innovation of CS UPC, Spain and EPFL, Switzerland

08/2020 - 07/2022

#### Overview

- Advanced algorithms and AI courses, partially taken at EPFL.
- "Outstanding" thesis on efficient attention mechanisms.

### Bachelor Degree in CS UPC, Spain and ETH, Switzerland

08/2016 - 07/2020

#### Overview

- Second-best thesis.
- National excellence scholarship

## SKILLS

Computer Vision

Multi modality

Transformers

GNNs

Pytorch

Agents

Generative AI

## SELECTED PUBLICATIONS

"Beyond Caption-Based Queries for Video Moment Retrieval", CVPR 2026.

- Problem:** VLM are trained on captions, not queries | **Solution:** Targeted modifications to seamlessly promote generalization.

"Sparse-Dense Side-Tuner for efficient Video Temporal Grounding", ICCV 2025.

- Problem:** VLM fine-tuning memory bottlenecks | **Solution:** Parameter-efficient adaptation for video understanding.

"SADA: Semantic adversarial unsupervised domain adaptation for Temporal Action Localization", WACV'25

- Problem:** Visual domain shift | **Solution:** Novel adversarial loss.

"Higher-Order Molecular Learning: The Cellular Transformer", ICLR workshop '25

- Problem:** High-order dependencies | **Solution:** Topological-aware attention.

"IGNITION: Bridging the Gap Between Graph Neural Networks and Networking Systems", IEEE Network '21

- Problem:** GNN complexity | **Solution:** YAML-based abstraction framework (no coding).

## ACHIEVEMENTS AND CERTIFICATES

CVPR '23,'24, IJLR and IJCV reviewer

Invited lecturer on the Master of Computer Vision, UB (2024, 2025, 2026)

Participation in EEML summer school '24

3rd prize in the Student Research Competition organized by SIGCOMM '21 (sponsored by Microsoft)

1st prize in RareHacks with a chatbot to help patients with pediatric cancer (2019)

## LANGUAGES

Catalan  
Native or Bilingual Proficiency

Spanish  
Native or Bilingual Proficiency

English  
Native or Bilingual Proficiency

German  
Limited Working Proficiency

French  
Limited Working Proficiency