Alvaro Budria

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My research interests are in Computer Vision, Graphics, and Machine Learning, with a focus on 3D reconstruction and understanding of rigid and nonrigid shapes, human avatars, and human-scene interaction.

EDUCATION

Institut de Robòtica i Informàtica Industrial (CSIC-UPC)   Nov. 2023 — 2026
PhD Candidate   Advisor: Francesc Moreno-Noguer

Universitat Autònoma de Barcelona (UAB)   Sept. 2022 — Sept. 2023
MEng. in Computer Vision   GPA: 9.6/10
Best Master's Thesis Award   With Distinction (Top 1/33)
Honors in:
3D Vision, Optimization and Inference, Visual Recognition, Machine Learning and Master's Thesis.

Universitat Politècnica de Catalunya (UPC)   Sept. 2018 — July. 2022
BEng. in Data Science   GPA: 8.29/10
Honors in: Bachelor's Thesis, Algebra and Calculus II.

Eastern European Machine Learning Summer School (EEML)   July 2023
Received a Best Poster Award in "applications and social impact" category for my work on sign language.

RESEARCH EXPERIENCE & PUBLICATIONS

Served as **reviewer** for ECCV 2024.

Recognized as **outstanding reviewer** (top 2%) for CVPR 2024.

Paper under review at ACCV 2024: ***Alvaro Budria***, *Adrian Lopez, Oscar Lorente, Francesc Moreno-Noguer*. InstantGeoAvatar: Efficient Geometry and Appearance Modeling of Animatable Avatars from Monocular Video.

Institut de Robòtica i Informàtica Industrial (CSIC-UPC)   Barcelona
Research Intern   Sept. 2022 - May 2023
- Implemented accelerated version of a state-of-the-art method for 3D reconstruction from images (github.com/alvaro-budria/NeuSacc).
- Funded with a *Beca INIREC* (research intern scolarship).

Universitat Politècnica de Catalunya (UPC)   Barcelona
Bachelor's Thesis   Jan. 2022 - June 2022
- First study of topic detection in Sign Language videos. Benchmarked several video features and neural architectures.
- Presented at CVPR Workshop: ***Alvaro Budria***, *Laia Tarrés, Gerard I. Gállego, Francesc Moreno-Noguer, Jordi Torres, Xavier Giro-i-Nieto*. Topic Detection in Continuous Sign Language Videos. *In the CVPR Workshop "AVA: Accessibility, Vision, and Autonomy Meet"*, 2022. arxiv.org/abs/2209.02402, github.com/imatge-upc/sign-topic
- Funded with a *Beca Col·laboració* (research intern scolarship).

INDUSTRY EXPERIENCE

Amazon   Berlin
Applied Science Intern   Aug. 2024 - Dec. 2024
Aizon   Barcelona
ML Engineer Intern   Nov. 2021 - July 2022
- Developed a pipeline for segmenting cells in biomedical images. Obtained 0.79 IoU on a held-out dataset.
- Devised model conversion pipeline from SparkML to cross-compatible ONNX format.

ZeClinics   Sant Cugat del Vallès
Computer Vision Intern   Feb. 2021 - June 2021
- Created image and video segmentation pipeline capable of performing batch inference on hundreds of images and videos within minutes with high accuracy.

PROJECTS

3D Reconstruction of Urban Scenes
https://github.com/alvaro-budria/3D-Recovery-of-Urban-Scenes   2023
- Implemented photo-sequencing algorithm for multiple-camera temporal image sorting.
- Performed SfM with COLMAP and Meshroom, for 3D reconstruction of sculptures and architectural scenery.

Single and Multicamera Car Tracking in Residential Scenes
https://github.com/alvaro-budria/mcv-m6-2023-team2   2023
- Developed a system for surveillance and traffic monitoring with single and multicamera tracking.
- Achieved re-identification across cameras with metric learning using a Triplet Siamese Network.

MISCELLANEA

- **Volunteering:** *Deep Learning Barcelona Symposium 2022* ; *Language support for newcomers (Voluntariat per la Llengua, 2023).*
- **LauzHack 2023:** 2nd prize at the 2023 EPFL Hackathon for my team's project *VirtuWheel*.