# ÒSCAR LORENTE COROMINAS

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## SKILLS

| | |
|---|---|
| **Programming** | Python · C++/C · Matlab · SQL |
| **Software** | Blender · COLMAP · MeshLab · Qt Creator · ROS · Git · LaTeX · Linux |
| **Libraries** | PyTorch · OpenCV · Numpy · Pillow · Trimesh · Open3D · PCL · Detectron2 |

## EDUCATION

**M.Sc. in Computer Vision**                                                                 Barcelona, Spain
Universitat Autònoma de Barcelona (UAB) - Computer Vision Center (CVC)          Oct. 2020 - Sep. 2021
**9.47/10** - Top Student Award

**B.Sc. in Telecommunications Engineering**                                       Barcelona, Spain
Universitat Politècnica de Catalunya (UPC)                                       Sep. 2016 - Jul. 2020
**9.10/10** in the Audiovisual Systems major

## WORK EXPERIENCE

**Research Intern** · 3D Human Reconstruction Team (Python)                      Barcelona, Spain
Institut de Robòtica i Informàtica Industrial, CSIC                              May. 2021 - Now

- Automated a system to obtain detailed 3D human reconstruction from just a smartphone video using Implicit Differentiable Renderer (IDR)
- Improved the 3D reconstruction of specific body areas with an attention mechanism
- Integrated a method to align and evaluate 3D reconstructions in centimeters

**Research Intern** · LIDAR Point Clouds Processing Team (Python/C++)            Terrassa, Spain
Universitat Politècnica de Catalunya (UPC)                                       Oct. 2020 - Apr. 2021

- Automated the 3D point cloud annotation process by transferring 2D labels
- Fine-tuned Deep Learning models in the LIDAR 3D pedestrian detection task
- Developed an annotation tool to label 3D bounding boxes with Qt Creator

**Computer Vision Engineer** · LIDAR-based 3D Perception Team (C++)              Terrassa, Spain
Beamagine S.L.                                                                   Feb. 2020 - Jul. 2020

- Trained PointNet++ to classify pedestrians in 3D clusters
- Implemented a system to crop 3D human/background clusters from LIDAR point clouds by transferring 2D labels from RGB images
- Fine-tuned YOLOv3 improving pedestrian detection in outdoor RGB images

## PROJECTS

**Multi-view 3D People Reconstruction with Deep Learning** (Python)             May. 2021 - Sep. 2021

- Explored the contribution of parametric models in implicit neural representations for multi-view 3D human reconstruction with very sparse views
- Obtained 0.63 centimeters of Chamfer distance in the 3D human reconstructions

**Nvidia AI-City Challenge** · **Multi-Target Multi-Camera Tracking** (Python)  Feb. 2021 - Apr. 2021

- Designed a car Re-Identification system using siamese networks and metric learning
- Fine-tuned Faster R-CNN with Detectron2 improving car detection up to 0.97 mAP
- Performed car tracking with Kalman filter and the estimated optical flow