ÒSCAR LORENTE COROMINAS

(+34) 684 083 678 | oscar.lorente.co@gmail.com | oscarlorente.github.io | oscarlorente | lorenteoscar

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 - Best 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 only 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