

Passionate about computer vision and deep learning. Focused on pushing the boundaries of [future video frame prediction](#) using [synthetic data](#) generated from [interactive VR environments](#) and addressing the [domain shift problem](#). Also excited about GPGPU programming, 3D computer graphics and robotics.

EDUCATION

- University of Alicante, PhD student** *Sep. 2018 – Present*
- Focused on Deep Learning and Computer Vision for Future Video Frame Prediction.
 - Supervised by Prof. [Jose Garcia-Rodriguez](#) and [Sergio Orts-Escolano](#).
- University of Alicante, M.Sc. in Robotics** *Sep. 2016 – July 2017*
- Extraordinary award for best academic record – Grade 9.33/10.
 - Master's thesis: “[A long short-term memory based Schaeffer gesture recognition system](#)”.
- Rey Juan Carlos University, M.Sc. in Comp. Graphics, VR and Games** *Sep. 2015 – July 2016*
- Completed coursework: 3D graphics, rendering, parallel programming, VR interaction and haptics.
- University of Salford, Erasmus Intensive Programme on Big Data** *June 2014 – July 2014*
- University of Alicante, B.Sc. in Computer Engineering** *Sep. 2011 – July 2015*
- High Academic Performance Group – Grade: 7.52/10.
 - Bachelor's thesis: “[Hand gesture recognition for human-computer interaction using low-cost RGB-D sensors](#)”.

WORK/RESEARCH EXPERIENCE

- FORTH, Visiting Researcher** *Sep. 2020 – Dec. 2020*
- Supervised by Prof. [Antonis Argyros](#) and [Nikolaos Kyriazis](#) in the [Computational Vision and Robotics laboratory](#).
 - Developed [HandGAN](#) to close the gap between synthetic and real images of hands via image-to-image translation.
- University of Alicante, Research Engineer** *Mar. 2018 – Aug. 2018*
- Implemented [UnrealGrasp](#) to enable interaction in [UnrealROX](#), a VR environment for synthetic data generation.
- University of Alicante, Research Engineer** *Sep. 2017 – Feb. 2018*
- Implemented a [gesture recognition system](#) deployed on Pepper robot to assist children with autism. See [also](#).
- University of Alicante, Research Engineer** *July 2016 – Dec. 2016*
- Developed an [RNN-based system for oil spill detection](#) in SLAR imagery captured from unmanned aerial vehicles.

MOST RELEVANT PUBLICATIONS

- “**H-GAN: the power of GANs in your Hands**” S. Oprea, G. Karvounas, P. M.-Gonzalez, N. Kyriazis, S. O.-Escalano, I. Oikonomidis, A. G.-Garcia, A. Tsoli, J. G.-Garcia, A. Argyros. *IJCNN*, 2021 [[Paper](#) | [Video](#) | [Code](#)]
- “**A Review on Deep Learning Techniques for Video Prediction**” S. Oprea, P. M.-Gonzalez, A. G.-Garcia, J. C.-Vargas, S. O.-Escalano, J. G.-Rodriguez, A. Argyros. *PAMI*, 2020 [[Paper](#)]
- “**A visually realistic grasping system for object manipulation and interaction in virtual reality environments**” S. Oprea, P. M.-Gonzalez, A. G.-Garcia, J.-A. C.-Vargas, S. O.-Escalano, J. G.-Garcia. *Computer & Graphics, El Sevier*, 2019 [[Paper](#) | [Video](#) | [Code](#)]
- “**The RobotriX: An eXtremely Photorealistic and Very-Large-Scale Indoor Dataset of Sequences with Robot Trajectories and Interactions**” A. G.-Garcia, P. M.-Gonzalez, S. Oprea, J. C.-Vargas, S. O.-Escalano, J. G.-Garcia, A. J.-Alvarez. *IROS (oral)*, 2018 [[Paper](#) | [Video](#) | [Code](#)]

OPEN-SOURCE WORK

- HandGAN**, deep learning for synthetic-to-real image translation in PyTorch: <https://github.com/sergiuoprea/hgan>
- UnrealGrasp**, for VR interaction in Unreal Engine 4: <https://github.com/3dperceptionlab/unrealgrasp>
- UnrealROX**, for synthetic data generation in Unreal Engine 4: <https://github.com/3dperceptionlab/unrealrox>

AWARDS AND EXTRA-CURRICULAR ACTIVITIES

- Udacity courses:** [Self-Driving Cars Nanodegree - Term 1](#) (2017), [Deep Learning Foundations Nanodegree](#) (2017)
- Summer schools:** [PUMPS+AI](#) (2018), [AERFAI Deep Learning](#) (2017), [CUDA](#) (2013), [OpenGL](#) (2013)
- Participation in research projects:** [COMBAHO](#) (2017-2019), [ONTIME](#) (2016), [SIRMAVED](#) (2015)
- Awards:** PhD ACIF Grant (2018), M.Sc. in Robotics best academic record (2017), Research Initiation Grant (2017)

SKILLS

- Technical:** Python, C++, C, CUDA, Unreal Engine 4, Deep Learning frameworks (PyTorch/Tensorflow)
- Languages:** English (proficient), Romanian (native), Spanish (native), French (entry level).