Eduardo Romera

June/1991 (age 29)
Madrid, Spain
✉ *dudu.erc@gmail.com*

Webpage: **http://www.robesafe.es/personal/eduardo.romera**

Research Interests

Computer Vision: *Deep Learning, Machine Learning, CNNs, Semantic Segmentation, Object Detection, Motion Detection, Adversarial Learning, GANs.*

Intelligent Transport Systems: *Autonomous vehicles, ADAS, smart driving applications, driver analysis, drowsiness and aggressiveness detection.*

Robotics: *Artificial Intelligence, perception, visual SLAM, sensor fusion.*

Experience

Present - Oct 2019 **Research Scientist - ObjectVideo Labs (OVL) / Alarm.com, 100% remote.** Pixcellence got acquired by Alarm.com and I joined OVL department to develop new DL-based computer vision methods for their video products (both Edge & Cloud).

May 2020 - Nov 2018 **Postdoctoral Researcher at University of Alcalá (UAH), Madrid (Spain)** Collaborating with the Electronics Dpt. in developing Vision and Robotics research.

Oct 2019 - Oct 2018 **Chief Technology Officer (CTO) - Pixcellence Inc., 100% remote.** Leading the scientific and technological efforts related to our low-cost & low-power AI products.

Nov 2018 - Sept 2015 **Researcher/PhD Candidate - University of Alcalá (UAH), Madrid (Spain).** Developing my PhD in deep learning and computer vision for semantic scene understanding in autonomous vehicles in the Electronics Dpt. and RobeSafe group.

During this period I also performed the following work:
- **Mar-Apr 2018 (2 months) - Computer Vision Scientist - Nielsen, Madrid.** Developing deep learning/vision algorithms for automatization of market studies.
- **Sept-Dec 2017 (3 months) - Researcher (PhD visit) - University of California San Diego (UCSD), USA.** Developing algorithms for self-driving cars in the Computer Vision and Robotics Research Laboratory (CVRRL).
- **Sept-Dec 2016 (3 months) - Researcher (PhD visit) - NICTA/CSIRO, Canberra (Australia).** Developing deep learning nets for semantic segmentation.

Sept 2015 - Sept 2014 **Researcher - RobeSafe group, University of Alcalá (UAH), Madrid (Spain).** Development of an iPhone app (DriveSafe) that evaluates driving behaviours based on Computer Vision and Sensor Fusion, and my 2nd Master thesis fulfillment.

Sept 2014 - Sept 2013 **Research internship - Fraunhofer IOSB, Karlsruhe (Germany).** *Developing work in Computer Vision and Activity Recognition, and my 1st Master thesis fulfillment.*

Education

Nov 2018 - Sept 2015 **PhD (Cum Laude) in Artificial Intelligence,** *focused in Computer Vision and Robotics for Autonomous Vehicles, financed by a 4-years FPI grant,* UAH, Spain.

July 2015 - Sept 2014 **MSc in Electronical Engineering,** *"Official Masters Degree in Advanced Electronic Systems. Intelligent systems",* University of Alcalá (UAH), Spain.

Sept 2014 - Sept 2009 **BSc+MSc in Telecommunications Engineering,** *5-years engineering degree,* University of Alcalá (UAH), Spain. Last year was fulfilled in the Karlsruher Institut für Technologie (KIT), Karlsruhe (Germany) as Erasmus.

Complementary Education

Nov 2018	**Coursera Deep Learning Specialization (5 courses),** *Coursera/deeplearning.ai*
July 2015	**International Computer Vision Summer School (ICVSS) 2015 in Sicily,** *organized by the University of Cambridge (UK) and the University of Catania (Italy).*
July 2012	**Higher National Certificate in Aeronautical Technology,** *Glyndwr University, Wales (UK),* completed first of two summer periods
March 2012	**Diploma in Introduction to Game Development (C# for Windows),** *UAH*
March 2012	**Diploma in Programming Apps and Games for Android (Java),** *UAH*
May 2011	**Robotics Workshop organised by UAH Electronics Department,** *UAH*

Awards, Honors and Grants

Oct 2020	**Best PhD award**, Reward 1500€ , Energía Inteligente (UAH & URJC)
Nov 2018	**PhD honored with Cum Laude mention**, University of Alcalá (UAH)
June 2017	**Best Student Paper Award**, IEEE Intelligent Vehicles Symposium (IV 2017)
Nov 2015	**2nd Best Master Thesis Award** on Intelligent Transport Systems (IEEE ITSS)
July 2015	**Honored Master Thesis**, University of Alcalá (UAH)
March 2015	**4-year "FPI" grant to perform my Ph.D**, University of Alcalá (UAH)
2013-2014	**Erasmus grant to study in Germany**, UAH and KIT

Computer skills

Languages	Python, C/C++, Matlab, Lua, Objective-C, Java, PHP
Frameworks	Deep learning (PyTorch, Tensorflow, Caffe), Computer Vision (OpenCV, PointCloud Library), Robotics (ROS), Numerical (Matlab), Front-End dev (Qt, React-Native)
Mobile dev	React-Native (Javascript), iOS (Objective-C), Android (Java)
Miscellaneous	Git, Computer hardware, Windows/Linux, Office, LaTeX

Languages

Spanish	Native	
English	Advanced C1	*IELTS 7.0, British Council, Madrid - Dec.2012*
German	Intermediate B1	*Stay of a year in Germany*

Publications as 1st author (All Peer-reviewed)

Patents	**2 Patent Disclosures** (2020 & 2021) submitted with ObjectVideo Labs (related to Adversarial Learning to remove False Detections produced by Deep ConvNets).
Conference (7 pages)	**E. Romera**, L.M. Bergasa, K. Yang, J.M. Álvarez, R. Barea, "Bridging the Day and Night Domain Gap for Semantic Segmentation", IEEE Intelligent Vehicles (IV), France, 2019.
Conference (6 pages)	**E. Romera**, L.M.Bergasa, J.M.Álvarez, M.Trivedi, "Train Here, Deploy There: Robust Segmentation in Unseen Domains", IEEE Intelligent Vehicles (IV), China, 2018.
Journal (10 pages)	**E. Romera**, J.M. Álvarez, L.M. Bergasa, R. Arroyo, "ERFNet: Efficient Residual Factorized ConvNet for Real-time Semantic Segmentation", in IEEE Transactions on Intelligent Transport Systems, 2018. **Top 6 cited publication of the Journal for 2015-2020 (Google Scholar Metrics, updated June 2020).**
Conference (6 pages)	**E. Romera**, J.M. Álvarez, L.M. Bergasa, R. Arroyo, "Efficient ConvNet for Real-time Semantic Segmentation", IEEE Intelligent Vehicles (IV), California (USA), 2017, **Best Student Paper Award (1st Prize).**
Conference (6 pages)	**E. Romera**, L.M. Bergasa, R. Arroyo, "Need Data for Driver Behaviour Analysis? Presenting the Public UAH-DriveSet", IEEE Intelligent Transport Systems Conf. (ITSC), Brazil 2016.

Conference (4 pages)	**E. Romera**, L.M. Bergasa, R. Arroyo, "Can we unify monocular detectors for autonomous driving by using the pixel-wise semantic segmentation of CNNs?", IEEE Intelligent Vehicles (IV), WS: "DeepDriving", Sweden 2016.
Conference (6 pages)	**E. Romera**, L.M. Bergasa, R. Arroyo, "A Real-time Multi-scale Vehicle Detection and Tracking Approach for Smartphones", in IEEE Intelligent Transport Systems Conf. (ITSC), Spain 2015.

Additional co-authored publications

Journals	**6 co-authored Journal publications between 2017-2019**: 1 T-ITS (2019), 1 Applied Optics (2019), 3 Sensors (2x2019 & 2017), 1 Autonomous Robots (2017)
Conference papers	**17 co-authored Conference publications between 2015-2019**: 3 IV, 5 ITSC, 3 WAF, 2 ROBIO, 1 Humanoids, 1 IROS, 1 ICRA, 1 ICVES.
Book Chapters	**1 Book Chapter in Elsevier 2017** (Book: Intelligent Vehicles: Enabling Technologies and Future Developments)