Eduardo Romera

02/June/1991 (age 26)
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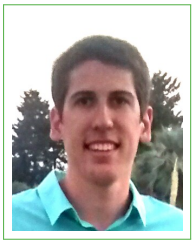

Research Interests

Computer Vision: *Deep learning, machine learning, Convolutional Neural Networks, scene understanding, semantic segmentation, object detection.*

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 - Sept 2017 **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).

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

Dec 2016 - Sept 2016 **Researcher (PhD visit) - NICTA/CSIRO (data61), Canberra (Australia).** Developing efficient deep learning architectures 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 (e.g. drowsy, aggressive) based on computer vision and sensor fusion, and 2nd Master thesis fulfillment: "Driver Behavior Evaluation by using Smartphones".

Sept 2014 - Sept 2013 **Research internship - Fraunhofer IOSB, Karlsruhe (Germany).** *Developing work in computer vision and 1st Master thesis fulfillment: "Data-driven activity recognition based on 2D/3D motion features".*

Education

Present - Sept 2015 **PhD Candidate in Electronics,** *focused in Computer Vision and Robotics, financed by a 4-years FPI grant,* University of Alcalá (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

July 2015 **International Computer Vision Summer School (ICVSS) 2015 in Sicily,** *organized by the University of Cambridge (UK) and the University of Catania (Italy).* This edition, named "Learning to see", was specially focused on deep learning (CNNs).

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

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	C/C++, Python, Lua, Matlab, Objective-C, Java, Javascript, PHP, C#
Frameworks	Deep learning (Torch, PyTorch, 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 (All Peer-reviewed)

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, 2017.
Conference (6 pages)	**E. Romera**, J.M. Álvarez, L.M. Bergasa and R. Arroyo, "Efficient ConvNet for Real-time Semantic Segmentation", IEEE Intelligent Vehicles (IV), California (USA), 2017, **Best Student Paper Award (1st Prize)**.
Journal (27 pages)	E. López, S. García, R. Barea, L.M. Bergasa, E. Molinos, R. Arroyo, **E. Romera** and S. Pardo, "A Multi-Sensorial Simultaneous Localization and Mapping (SLAM) System for Low-Cost Micro Aerial Vehicles in GPS-Denied Environments", Sensors, 2017.
Conference (6 pages)	R. Arroyo, P.F. Alcantarilla, L.M. Bergasa and **E. Romera**, "Fusion and Binarization of CNN Features for Robust Topological Localization across Seasons"", IEEE/RSJ Intelligent Robots and Systems (IROS), South-Korea 2016.
Conference (6 pages)	**E. Romera**, L.M. Bergasa and R. Arroyo, "Need Data for Driver Behaviour Analysis? Presenting the Public UAH-DriveSet", IEEE Intelligent Transport Systems Conf. (ITSC), Brazil 2016.
Conference (6 pages)	R. Arroyo, P.F. Alcantarilla, L.M. Bergasa, and **E. Romera**, "OpenABLE: An Open-Source Toolbox for Application in Life-Long Visual Localization of Autonomous Vehicles", IEEE Intelligent Transport Systems Conf. (ITSC), Brazil 2016.
Conference (6 pages)	C. Arroyo, L.M. Bergasa, and **E. Romera**, "Adaptive Fuzzy Classifier to Detect Driving Events from the Inertial Sensors of a Smartphone", IEEE Intelligent Transport Systems Conf. (ITSC), Brazil 2016.
Conference (4 pages)	**E. Romera**, L.M. Bergasa and 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 and R. Arroyo, "A Real-time Multi-scale Vehicle Detection and Tracking Approach for Smartphones", in IEEE Intelligent Transport Systems Conf. (ITSC), Spain 2015.
Conference (6 pages)	R. Arroyo, P.F. Alcantarilla, L.M. Bergasa and **E. Romera**, "Towards Life-Long Visual Localization using an Efficient Matching of Binary Sequences from Images", in IEEE International Conf. on Robotics and Automation (ICRA), Seattle (USA) 2015.