Carlos Gómez Huélamo

My name is Carlos Gómez Huélamo, currently PhD candidate in Artificial Intelligence and Robotics at the RobeSafe research group (Electronics Department, University of Alcalá) under the supervision of Prof. Luis Miguel Bergasa and Prof. Rafael Barea Navarro.
As member of the RobeSafe research group, I am working in research projects with other universities and companies to generate an important technology transfer to companies and publications. In particular, my PhD thesis is focused on "Deep Learning based Multi-Object Tracking, Sensor Fusion and Motion Forecasting for Intelligent Vehicles applications".

PERSONAL INFORMATION

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19/12/1995

Spanish

NETWORKS

- **LinkedIn**: www.linkedin.com/in/carlos-gómez-huélamo
- **GitHub**: https://github.com/Cram3r95
- **Google scholar**: https://cutt.ly/ohkTwV5

TECHNICAL SKILLS

Advanced Level:
- Computer Vision, Camera, LiDAR
- Multi-Object Tracking, Sensor Fusion and Motion Forecasting algorithms
- Linux, Docker
- C++, Python, MATLAB
- Self-Driving simulators (CARLA, V-REP)

Intermediate level:
- ROS
- Git
- RADAR
- Machine Learning, Deep Learning
- Jetson NVIDIA embedded systems

Basic level:
- ROS2
- AWS

SOFT-SKILLS

EDUCATION

Ph.D. candidate : Intelligent Transportation Systems. Advanced Electronic Systems.
University of Alcalá - Alcalá de Henares (Community of Madrid, Spain)

- 4 years scholarship (FPI-UAH) to course the Ph.D. (2019-2023)

Visual Perception for Self-Driving Cars : Mechatronics, Robotics, and Automation Engineering, 09/2020
University of Toronto - Coursera (MOOC platform)

Grade: 99.6 / 100

Sensor Fusion Engineer Nanodegree : Mechatronics, Robotics, and Automation Engineering, 06/2020
Udacity - MOOC platform

Master's degree : Industrial Engineering (Focused on Robotics and Perception), 09/2019
University of Alcalá - Alcalá de Henares (Community of Madrid, Spain)

- Grade: 8.5/10 (Top 2 students)
- 4 months scholarship at the Tampere University of Technology, Finland (Erasmus+)
- MSc thesis: "Predictive Techniques for Scene Understanding by using Deep Learning", under the supervision of Prof. Luis Miguel Bergasa Pascual (Qualified with Honours)

Master's degree : Industrial Engineering (Focused on Robotics and Perception), 05/2019
Tampere University of Technology - Tampere (Finland)

Erasmus+ Programme (January 2019 - May 2019)
3/4 subjects Qualified with Honours

Bachelor's degree : Industrial Electronics and Automation Engineering, 09/2017
University of Alcalá - Alcalá de Henares (Community of Madrid, Spain)

- Grade: 7.66/10 (Top 3 students)
- 4 months scholarship at the University College of Cork, Ireland (Erasmus+)
- Research scholarship to course my BSc thesis
- BSc thesis: "Reconstrucción de mapas con detección de cambios a partir de Goole Street View", under the supervision of Prof. Luis Miguel Bergasa Pascual (Qualified with Honours)

Bachelor's degree : Industrial Electronics and Automation Engineering, 12/2016
University College Cork - Cork (Ireland)

- Communication skills
- Teamwork and leadership
- Adaptability to multicultural environments
- Lateral and critical thinking
- Motivation for entrepreneurship
- Self-criticism
- Self-taught consciousness

LANGUAGES

Spanish (Mother tongue)
English (C1) *
* Common European Framework of Reference Level (MECR)

Erasmus+ Programme (August 2016 - December 2016)
1 subject Qualified with Honours

EXPERIENCE

Ph.D. candidate 04/2019 Hasta Actual
University of Alcalá - Alcalá de Henares, Community of Madrid
Projects:

1. Techs4AgeCar: Perception and Vehicle to User (V2U) communication robust technologies. In this project I am currently performing the following tasks:

- Study of Deep Learning based approaches for Multi-Object Tracking, Sensor Fusion and Motion Forecasting for Intelligent Vehicles applications.
- Implementation of the proposed models both in simulation (CARLA simulator) and our real-world electric vehicle.

Funded by the Ministerio de Ciencia, Innovación y Universidades with reference RTI2018-099263-B-C21.

2. RoboCity2030: Madrid Robotics Digital Innovation Hub (RoboCity2030-DIH-CM). In collaboration with Universidad Carlos III (UC3M), CAR-CSIC, Universidad Politécnica de Madrid (UPM), Universidad Rey Juan Carlos (URJC) and Universidad Nacional de Educación a Distancia (UNED).

Funded by the Community of Madrid and Co-funded by the European Union with reference CM (P2018/NMT- 4331).

Research staff 10/2017 Hasta 03/2019
University of Alcalá - Alcalá de Henares, Community of Madrid
As research staff of the RobeSafe research group, in these months I was involved in the SmartElderlyCar project, which main scope is implementing an autonomous electric vehicle able to drive in the campus of the Universidad de Alcalá. In particular, I performed the following tasks:
- Design of a semantic segmentation algorithm for scene understanding based on Convolutional Neural Networks.
- Design of a perception algorithm based on the fusion of visual information and LiDAR enough for the navigation of an autonomous vehicle, both in simulation (V-REP and CARLA simulators) and real-world (real autonomous electric car of the RobeSafe research group).
In collaboration with the GROBIS research group (Universidad de Vigo, Spain).
Project funding by Ministerio de Economía y Competitividad. Ref: UAH: TRA2015-70501-C2-1-R (2016-2018), UVIGO: TRA2015-70501-C2-2-R (2016-2018)

Internship Electronic engineer 01/2017 Hasta 06/2017
Renovetec Ingeniería S.L. - Fuenlabrada, Community of Madrid
BSc degree internship program (External Practical Training). I assisted on two main tasks:
1. Ellaboration of teaching material about CCP (Concentrated Cylinder Parabolic) solar thermal technology in the SolarCV Project, a SSA (Sector Skill Alliance) to cover skill needs through delivery and recognition of EU joint CV in Concentrated Solar Power technology. Co-funded by the Erasmus+ Programme of the European Union.
2. Development of a data acquisition systems for industrial environments through electronic instrumentation devices.

HONOURS AND AWARDS

Individual:
- First prize in the "2020 Awards - Campus of International Excellence: Bioenergy & Smart Cites" (Master's thesis category). Funded by UAH and URJC universities
- First prize in the "I Short Video Contest). Funded by UAH university (2020)
- Honourable mention in the XVI Edition of the "Technological Innovation Award" (2019). Funded by COIIM and FRBS organizations

- Best BSc thesis in Industrial Engineering of Guadalajara (2018). Funded by COITIGU organization and UAH university
- Second Prize in the "Prize for the Best Degree Final Projects 2017 in the Industrial Branch of the Community of Madrid" (2018). Funded by COIIM organization

Collective:

- Best Presentation Award. WAF conference (2020)
- Best Short Video in the field "Why be an Industrial Engineer? Funded by UAH university (2020)
- Best Poster Award. Workshop Robocity2030 (2019)
- Institutional Leadership Award 2019 from the IEEE Intelligent Transport Systems Society
- Expert Jury Prize in the Entrepreneurship contest ("Tu idea en un minuto") (2016)