

CURRICULUM VITAE

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Languages

Spanish Mother tongue.
English B1 level by Languages School of Universidad de Sevilla.
B2 level by Universidad Internacional Menéndez Pelayo.

Education

2018 – Present PhD student at Service Robotics Laboratory (Univerisdad Pablo de Olavide).

2017 – 2018 *Logic, Computation and Artificial Intelligence* Master's Degree by Universidad de Sevilla. Mark of 9,61 out of 10.

2016 Final assignment to achieve Physics Degree titled "Introduction to Synthetic Biology. A genetic toggle switch". In this work I used Matlab to implement the main code. Mark of 10 out of 10.

March 2016 – July 2016 Internship in *Agencia Estatal de Meteorología* (AEMET). Coding in R language to develop a meteorology prediction model. Duration: 150h.

2012-2016 Physics Degree by Universidad de Sevilla.

Work Experience

- February 2020 – Present** Researcher at Service Robotics Laboratory in the Specific Research Project “Planification, Perception and Cooperative Navigation in UAVS system in Coordination with UGV RTI2018-100847-B-C22”.
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- February 2019 – January 2020** Research Assistant at Service Robotics Laboratory in the Specific Research Project “Human Resource Support for Care Project (Provide Support In Hardware And Software For The Care Project And Carry Research Work On Socially Intelligent Robots” in collaboration with Honda Research Institute Japan Co.Ltd.
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- May 2018 – January 2019** Research Assistant at Service Robotics Laboratory in the European research project “ECHORD++: European Clearing House for Open Robotics Development++”.
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- December 2017 – May 2018** Internship in *Asociación de Investigación y Cooperación Industrial de Andalucía* (AICIA) in the European research project SIAR (UE/SIAR – 1589).
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- September 2016 – December 2017** Researcher at Service Robotics Laboratory (Universidad Pablo de Olavide) in the National Research Project “New systems of Micro Aerial Vehicles estimation and navigation based on *Drosophila*’s ocelli OCELLIMAV” (TEC-61708-EXP).

Research Projects

- February 2020 – Present** Specific Research Project “Planification, Perception and Cooperative Navigation in UAVS system in Coordination with UGV RTI2018-100847-B-C22”.
- Description:* development of Deep Learning based system to estimate a mobile robot trajectory. Software development to process range sensors data (LiDar) in Python, Keras and TensorFlow software.
- Role:* Researcher.
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- February 2019 – January 2020** Specific Research Project “Human Resource Support for Care Project (Provide Support in Hardware And

Software For The Care Project And Carry Research Work On Socially Intelligent Robots” in collaboration with Honda Research Institute Japan Co.Ltd.

Description: trajectory estimation using Deep Learning techniques, analysing data from several sensors. Code was developed in Python using Keras and TensorFlow software.

Role: Research Assistant.

May 2018 – January 2019

European research project “ECHORD++: European Clearing House for Open Robotics Development++” (7 Framework Programme – Specific Programme Cooperation – Theme 3 “Information and Communication Technologies”-FP7-ICT-601116 ECHORD Plus Plus).

Description: application of Deep Learning techniques to estimation of a ground robot trajectory based on cameras.

Role: Research Assistant.

**September 2016 –
December 2017**

National Research Project “New systems of Micro Aerial Vehicles estimation and navigation based on *Drosophila*’s ocelli OCELLIMAV” (TEC-61708-EXP).

Description: application of Deep Learning techniques to develop a low-resolution cameras based system to recover angular rates of a MAV. The project was developed in Python using Keras software.

Role: Researcher.

Conferences communications and publications

February 2019

Paper “*Bioinspired Direct Visual Estimation of Attitude Rates with Very Low Resolution Images using Deep Networks*”. In Proceedings of the IEEE International Conference on Robotics and Automation, ICRA, 2019.

September 2017

Abstract and poster “*Bioinspired Vision-Only Attitude Rate Estimation for Micro Aerial Robots using Machine Learning*”. International Conference on Intelligent Robots and Systems (IROS), Vancouver. OCELLIMAV Research project.

May 2017

Paper titled *“Bioinspired Vision-only UAV Attitude Rate Estimation using Machine Learning”*. International Conference on Unmanned Aircraft Systems (ICUAS), Miami. Under the OCELLIMAV Research project.

Programming languages

Matlab	Occasional user level.
R	Occasional user level.
Python	User level. Code example: https://github.com/robotics-upo/OCELLIMAV-Project

Office software

Microsoft Office and Liberoffice Design	Word, Excel and PowerPoint. User level.
	Photoshop, Lightroom. User level.

References

Professor Luis Merino.
Principal Researcher at Service Robotics Laboratory.
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Professor Fernando Caballero.
E-mail: fcaballero@gmail.com