

J. Ricardo Sánchez Ibáñez

Robotics Researcher

☎ (+34) 951 952 527 • ✉ ricardosan@uma.es
📄 <https://jricardosan.github.io/> • CV Updated on October 2020

EXPERIENCE

Research Projects.....



ADE: Autonomous DEcision making in very long traverses

Málaga, Spain

Sep2019-Jan2021

Research Assistant

H2020 European Research and Innovation Project, <https://www.h2020-ade.eu/>

Funded by the European Comission under Grant Agreement [821988](#)

- Implementation and Testing of a Mobile Manipulation software component.
- Field Testing at DFKI facilities in Bremen, Germany.
- Target Platform: [SherpaTT rover](#).
- Software skills: C++, DART, OpenCV, MARS simulator, GitHub, GitLab.



FIRST-ROB

Málaga, Spain

Jan2018-Jul2019

Research Assistant

Research contract funded by Andalusian Government for assistance in Spanish Government Project [DPI2015-65186-R](#): *Multi-robot systems for Cooperation with Human and Dog First Response Rescue Teams in Catastrophe Situations*

- Development of anisotropic path planning techniques for autonomous navigation on irregular terrain.
- Participation in showcase of robotic demonstrations for Search and Rescue applications. YouTube video (in spanish): <https://youtu.be/qGYvessr6SI>
- Field Tests in Malaga, Spain, using target platforms [RAMBLER](#) and [CUADRIGA](#).
- Software skills: Python, MATLAB, LabView, GitHub.



UMA-ESA Collaboration Agreement

Málaga, Spain

Noordwijk, Netherlands

Nov2016-Dec2017

May2018-Jun2018

Jul2019

Research Intern,

Contract 4000118072/16/NL/LvH/gp

1st Project (2016-2017): Path Planning in Extreme Terrains

2nd Project (2018-2019): Path and Motion Planning for a Sample Fetching Rover

- Kinematic and Dynamic modeling of a reconfigurable rover for path planning purposes.
- Development of a dynamic multi-resolution path planner. GitHub repository: https://github.com/esa-prl/planning-path_planning
- Target Platforms: [ExoTeR](#) and [HDPR](#). Field Testing YouTube video: <https://youtu.be/X4mihNTEVGw>
- Software skills: C++, Ruby, RoCK, V-REP simulator, GitHub.

Research Stays.....



DFKI, Robotics Innovation Center

German Research Institute for Artificial Intelligence

Duration: 1 month

Research visit motivated by the ADE project.

Bremen, Germany

Jul2020-Aug2020



ESA-ESTEC, Planetary Robotics Laboratory

European Space Agency

Duration: 12 months

Research stays motivated by UMA-ESA Collaboration Agreements

Noordwijk, Netherlands

Abr2017–Dic2017

May2018–Jun2018

Jul2019

EDUCATION

University Degrees.....



PhD in Mechatronics

University of Málaga

Title: *Extreme Path Planning for Exploration Vehicles*

Málaga, Spain

Oct2016–Ongoing

(Expected: beginning 2021)



Masters Degree in Mechatronics

University of Málaga, Average score – 9.38 out of 10.00

Final Project: *Path planning simulator for reconfigurable rovers in extreme terrains*, Score: 10.0 out of 10.0 (Pass with honors)

Málaga, Spain

Oct2015–Sep2017



EHEA Degree In Industrial Technologies Engineering

University of Málaga, Average score – 7.53 out of 10.00

Final Project: *Development of low cost mobile platform for carrying out terrain recognition tests*, Score: 9.4 out of 10.0

Málaga, Spain

Oct2011–Sep2015

Attended Courses.....



Short course on Deep Learning and Computer Vision for Autonomous Systems

Aristotle University of Thessaloniki, AIIA Summer School

Link: <http://icarus.csd.auth.gr/aiaa-summer-school-on-autonomous-systems-2020/>

Virtual

Aug2020



Programming short course and workshop on Deep Learning and Computer Vision for Autonomous Systems

Aristotle University of Thessaloniki, AIIA Summer School

Link: <http://icarus.csd.auth.gr/autonomous-systems-2020/>

Virtual

Aug2020

PUBLICATIONS

Journals.....

Journal of Field Robotics

Efficient Autonomous Navigation for Planetary Rovers with Limited Resources Aug2020

JCR Impact Factor: 3.581

Authors: L. Gerdes; M. Azkarate; J.R. Sánchez-Ibáñez; L. Joudrier, C.J. Pérez-del-Pulgar

DOI: [10.1002/rob.21981](https://doi.org/10.1002/rob.21981)

Engineering Applications in Artificial Intelligence

Dynamic Path Planning for Reconfigurable Rovers using a Multi-layered Grid Nov2019

JCR Impact Factor: 4.201

Authors: J.R. Sánchez-Ibáñez; C.J. Pérez-del-Pulgar; M. Azkarate; L. Gerdes; A. García-Cerezo

DOI: [10.1016/j.engappai.2019.08.011](https://doi.org/10.1016/j.engappai.2019.08.011)

MDPI Electronics

Choosing the Best Locomotion Mode in Reconfigurable Rovers Jul2019

JCR Impact Factor: 2.412

Authors: C.J. Pérez-del-Pulgar; P. Romeo Manrique; G.J. Paz-Delgado; J.R. Sánchez-Ibáñez;

M. Azkarate

DOI: [10.3390/electronics8070818](https://doi.org/10.3390/electronics8070818)

Conferences.....

IROS 2020 - International Conference in Intelligent Robots and Systems

Las Vegas, USA

Improving Autonomous Rover Guidance in Round-Trip Missions Using a Dynamic Cost Map

Oct2020

Authors: G.J. Paz-Delgado; M. Azkarate; J.R. Sánchez-Ibáñez; L. Gerdes;

C.J. Pérez-del-Pulgar

iSAIRAS 2020 - 15th International Symposium on Artificial Intelligence, Robotics and Automation in Space

Leiden, Netherlands

Enhancing Mobile Manipulation with Synchronized Arm-Locomotion Control

Oct2020

Authors: J.R. Sánchez-Ibáñez; R. Domínguez; F. Cordes; C.J. Pérez-del-Pulgar

Link: <https://www.hou.usra.edu/meetings/isairas2020fullpapers/pdf/5029.pdf>

ASTRA 2019 - 15th Symposium on Advanced Space Technologies in Robotics and Automation

Leiden, Netherlands

Coupled Path And Motion Planning For A Rover-Manipulator System

Jun2019

Authors: J.R. Sánchez-Ibáñez; G.J. Paz-Delgado; P. Romeo-Manrique;

C.J. Pérez-del-Pulgar; M. Azkarate

Link: <https://hdl.handle.net/10630/17820>

iSAIRAS 2018 - 14th International Symposium on Artificial Intelligence, Robotics and Automation in Space

Madrid, Spain

Multi-scale path planning for a planetary exploration vehicle with multiple locomotion modes

Jun2018

Authors: C.J. Pérez-del-Pulgar; J.R. Sánchez; M. Azkarate; G. Visentin

Link: <https://hdl.handle.net/10630/15996>

AIM 2017 - IEEE International Conference on Advanced Intelligent Mechatronics

Munich, Germany

Path Planning for Reconfigurable Rovers in Planetary Exploration

Jul2017

Authors: C.J. Pérez-del-Pulgar; J.R. Sánchez; A.J. Sánchez; M. Azkarate; G. Visentin

DOI: [10.1109/AIM.2017.8014223](https://doi.org/10.1109/AIM.2017.8014223)

ASTRA 2017 - 14th Symposium on Advanced Space Technologies in Robotics and Automation

Leiden, Netherlands

Path Planning for Reconfigurable Rovers in Planetary Exploration

Jun2017

Authors: J.R. Sánchez; C.J. Pérez-del-Pulgar; M. Azkarate

Link: <http://hdl.handle.net/10630/14232>

LANGUAGE SKILLS



Spanish: Mothertongue



English: ESOL Cambridge CAE C1

Advanced Level



German: Goethe-Zertifikat B1

Intermediate Level

OTHERS

Software and Hardware Projects.....



OpenUMARov

University of Málaga, Department of Systems Engineering and Automation

Authors: C.J. Pérez-del-Pulgar; J.R. Sánchez-Ibáñez; P. López Lupiáñez; F.d.A. Delgado Rivero; L.M. Mantoani

- GitHub repository: <https://github.com/spaceuma/OPEN-UMA-Rover>
- YouTube video: <https://youtu.be/t7S4xO0TQe0>

GitHub

2016-Ongoing



6DOF Robot Simulink Diagram For Simulation

University of Málaga, Department of Systems Engineering and Automation

Authors: C.J. Pérez-del-Pulgar; J.J. Velasco; P. Cervera; I. Alzugaray; J.R. Sánchez-Ibáñez; A.M. Gómez

- Matlab Central Repository: <https://www.mathworks.com/matlabcentral/fileexchange/54455-6dof-robot-simulink-diagram-for-simulation>

Matlab Central

Dec2015

Final Project Degree Co-Supervision.....

Path Following for Autonomous Exploration Vehicles

Málaga, Spain

Bachelor Thesis, University of Malaga

Sep2020

Author: Mario LLamas Toledo

o YouTube video: <https://youtu.be/S8I5AR4kHX8>

Terrain Segmentation and Parameter Assignment for UGVs

Málaga, Spain

Bachelor Thesis, University of Malaga

Jul2019

Author: Sergio Martínez Hamdoun

o YouTube video: <https://youtu.be/2SyDnfQmp0>

V-REP modeling and simulation of a manipulator-vehicle coordinated system formed by AUBO i5 robotic arm and RAMBLER mobile platform

Málaga, Spain

Bachelor Thesis, University of Malaga

Jul2018

Author: Alberto Ruiz García

Rover and arm 3d model development using Vortex Studio

Málaga, Spain

Bachelor Thesis, University of Malaga

Jul2018

Author: Pablo Romeo Manrique

Scientific Disclosure.....



Research in Space Robotics - Workshop

Málaga, Spain

University of Málaga - Systems Engineering and Automation Department

Mar2020

Duration: 2 hours 30 minutes



Robotics from Malaga to explore planets -

Chat Session with High School Students

Málaga, Spain

University of Málaga - Scientific Disclosure and Publications Service

Nov2019

Duration: 3 hours

Number of attendees: 150



Space Robotics - Workshop

Málaga, Spain

University of Málaga - Systems Engineering and Automation Department

Jan2018

Duration: 3 hours 10 minutes

Volunteering.....



11th Annual European Robotics Forum (ERF2020)

Málaga, Spain

Staff Member

Mar2020



23rd Mediterranean Conference on Control and Automation

Málaga, Spain

Staff Member

Jun2015