

# Curriculum Vitae

Fecha del CV: 28/01/2024

## Datos personales

Nombre y Apellidos: **Francisco Martín Rico**

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## Situación profesional actual:

Organismo: **Universidad Rey Juan Carlos**

Dpto. / Centro: **Departamento de Teoría de la Señal y Sistemas Telemáticos y Computación /  
Escuela Técnica Superior de Ingenieros de Telecomunicaciones**

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Categoría Profesional: **Catedrático de Universidad**

Fecha de Inicio: **2022**

Acreditaciones: **Profesor Titular de Universidad**

Sexenios: **3 (vivo)**

Quinquenios: **3**

Direcciones de Tesis: **1**

Especialidad código UNESCO: **Robótica**

Docencias: **4**

## Formación Académica:

Ingeniería/Grado/Doctorado	Universidad	Año
<b>Doctorado en Robótica</b>	<b>Universidad Rey Juan Carlos</b>	<b>2008</b>
<b>Ingeniero en Informática</b>	<b>Universidad Rey Juan Carlos</b>	<b>2002</b>
<b>Ingeniero Técnico en Informática de Sistemas</b>	<b>Universidad Rey Juan Carlos</b>	<b>2000</b>

Estancias:

<b>CEA list</b>	<b>(París, Francia)</b>	<b>Septiembre 2020 - Octubre 2020</b>
<b>Carnegie Mellon</b>	<b>(Pittsburgh, PA, EEUU)</b>	<b>Agosto 2010 - Diciembre 2010</b>
<b>University of Essex</b>	<b>(Colchester, UK)</b>	<b>Junio 2006 - Septiembre 2006</b>

## Cargos de gestión unipersonales

- Coordinador del Grado en Ingeniería en Robótica Software (2021-actualidad)
- Coordinador del Grado en Ingeniería Telemática (2015-2021)
- Coordinador Erasmus del Grado en Ingeniería en Robótica Software (2018-2021)

## Publicaciones en Revistas Científicas y Congresos Relevantes

1. "A visual questioning answering approach to enhance robot localization in indoor environments", Juan Diego Peña-Narvaez, Francisco Martín Rico, José Miguel Guerrero, Rodrigo Pérez-Rodríguez. *Frontiers in Neurorobotics*. 2023. [Journal **Q3**]
2. "Open Source Robot Localization for Non-Planar Environments". Francisco Martín Rico | José Miguel Guerrero Hernández | Rodrigo Pérez-Rodríguez | Juan Diego Peña Narvaez | Alberto García Gómez-Jacinto. *Journal on Field Robotics*, 2024 (Accepted, In press). [Journal **Q2**]

3. "*Portable Multi-Hypothesis Monte Carlo Localization for Mobile Robots*" Alberto García, Francisco Martín, José Miguel Guerrero, Francisco J. Rodríguez Lera y Vicente Matellán. 2023 IEEE International Conference on Robotics and Automation (ICRA). Londres. [Class 2]
4. "*An autonomous ground robot to support firefighters' interventions in indoor emergencies*". Cristina Rodríguez Sánchez, Noelia Fernández, Francisco Martín y Jesús Roldán. Journal on Field Robotics. 2023 [Journal Q2]
5. "*Regulated Pure Pursuit for Robot Path Tracking*". Steve Macenski, Shrijit Singh, Francisco Martín Rico y Jonatan Ginés Clavero. Autonomous Robots. 2023. [Journal Q3]
6. "*Impact of decision-making system in social navigation*" Jonatan Gines Clavero, Francisco Martín Rico, Francisco J. Rodríguez-Lera, José Miguel Guerrero Hernández and Vicente Matellán Olivera. Multimedia Tools and Applications. 2022.[Journal Q2]
7. "*Towards explainability in robotics: a performance analysis of a cloud accountability system*" Francisco J. Rodríguez-Lera, Miguel A. Santamarta, Ángel M. Guerrero Higuera, Francisco Martín Rico, Vicente Matellán Olivera. Expert Systems. 2022.[Journal Q2]
8. "*Optimized Execution of PDDL Plans using Behavior Trees*" Francisco Martín Rico, Matteo Morelli, Huascar Espinoza, Francisco J. Rodríguez-Lera, Vicente Matellán Olivera. Proceedings of the 20th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS 2021). 2021.[Class 1]
9. "*PlanSys2: A Planning System Framework for ROS2*" Francisco Martín Rico, Jonathan Ginés, Vicente Matellán Olivera and Francisco Javier Rodríguez-Lera. Proceedings of the 2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2021), 2021.[Class 1]
10. "*Measuring Students Acceptance and Usability of a Cloud Virtual Desktop Solution for a Programming Course*" Francisco J. Rodríguez Lera, David Fernández González, Francisco Martín Rico, Ángel Manuel Guerrero-Higuera and Miguel Ángel Conde. Applied Sciences. 11(15). 2021.[Journal Q2]
11. "*Client-server approach for managing visual attention, integrated in a cognitive architecture for a social robot*" Francisco Martín Rico, Jonatan Gines Clavero, Francisco J. Rodriguez Lera, Angel Manuel Guerrero Higuera, Vicente Matellan Olivera. Frontiers in Neurorobotics. 15. 2021.[Journal Q2]
12. "*Semantic 3D Mapping from Deep Image Segmentation*" Francisco Martín, Fernando González, José Miguel Guerrero, Manuel Fernández, Jonatan Ginés. Journal on Applied Sciences, 11-4. 2021.[Journal Q2]
13. "*Evolution of a Cognitive Architecture for Social Robots: Integrating Behaviors and Symbolic Knowledge*" Francisco Martín, Francisco J Rodríguez Lera, Jonatan Ginés, Vicente Matellán. Applied Sciences. 2020 [JCR Q2].
14. "*Depicting Probabilistic Context Awareness Knowledge in Deliberative Architectures*" Jonatan Gines Clavero, Francisco J. Rodriguez Lera, Francisco Martín Rico, Ángel Manuel Guerrero Higuera and Vicente Matellan Olivera. Journal on Natural Computing.(In press). 2020 [JCR Q2].
15. "*A Acceptance Test for Assistive Robots*" Francisco Martín Rico, Francisco J. Rodriguez Lera, Jonatan Gines Clavero, Angel Manuel Guerrero Higuera, Vicente Matellan Olivera. Sensors.(In press). 2020 [JCR Q1]
16. "*The Marathon 2: A Navigation System*" Steven Macenski, Francisco Martín Rico, Ruffin White, Jonathan Ginés. Proceedings of the 2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2020), 2020. [Class 1]
17. "*Semantic visual recognition in a cognitive architecture for social robots*" Francisco Martín Rico, Francisco Gomez-Donoso, Félix Escalona, José García Rodríguez, Miguel Cazorla. Integr. Comput. Aided Eng. 27(3): 301-316. 2020 [JCR Q1]
18. "*A context-awareness model for activity recognition in robot-assisted scenarios*" Francisco J. Rodríguez Lera, Francisco Martín Rico, Ángel Manuel Guerrero Higuera, Vicente Matellán Olivera. Expert Syst. J. Knowl. Eng. 37(2). 2020 [JCR Q2]
19. "*A Social Navigation in a Cognitive Architecture Using Dynamic Proxemic Zones*" Jonathan Ginés, Francisco Martín Rico, David Vargas, Francisco J. Rodriguez Lera and Vicente Matellán Olivera. Sensors. 19, 5189. 2019. [JCR Q1].
20. "*A Context-Awareness Model for Activity Recognition in robot-assisted scenarios*" Francisco J. Rodriguez Lera, Francisco Martín Rico, Vicente Matellán Olivera and Miguel A. Guerrero. Expert Systems. (In press). 2019. [JCR Q2].
21. "*Octree-based localization using RGB-D data for indoor robots*" Francisco Martín Rico, Vicente Matellán Olivera, Francisco J. Rodriguez Lera and Jonathan Ginés. Engineering Applications of Artificial Intelligence. Volume 77, January 2019, Pages 177-185. 2019 [JCR Q1].
22. "*Tracking People in a Mobile Robot From 2D LIDAR Scans Using Full Convolutional Neural Networks for Security in Cluttered Environments*". Ángel Manuel Guerrero Higuera, Claudia Álvarez-Aparicio, Maria

- Carmen Calvo Olivera, Francisco J. Rodríguez Lera, Camino Fernández Llamas, Francisco Martín Rico, Vicente Matellán. *Frontiers in Neurorobotics*. 2019.[JCR Q2].
23. "*COMBAHO: A Deep Learning System for Integrating Brain Injury Patients in Society*" Jose Garcia-Rodriguez, Francisco Gomez-Donoso, Sergiu Oprea, Alberto Garcia-Garcia, Miguel Cazorla, Sergio Orts-Escolano, Zuria Bauer, John Castro-Vargas, Felix Escalona, David Ivorra-Piqueres, Pablo Martinez-Gonzalez, Eugenio Aguirre, Miguel Garcia-Silviente, Marcelo Garcia-Perez, Jose M. Cañas, Francisco Martín-Rico, Jonathan Gines, Francisco Rivas-Montero *Pattern Recognition Letters*, 2019. [JCR Q2].
  24. "*People detection and tracking using LIDAR sensors*" Claudia Álvarez Aparicio, Ángel Manuel Guerrero Higuera, Francisco Javier Rodríguez Lera, Jonatan Ginés Clavero, Francisco Martín Rico, Vicente Matellán. *Journal Robotics. Special Issue "Robotics in Spain 2019"*. 2019.
  25. "*Neural Networks for Recognizing Human Activities in Home-like Environments*" Francisco J. Rodríguez Lera, Francisco Martín Rico, and Vicente Matellán Olivera. *Integrated Computer-Aided Engineering*. 2018. [JCR Q1].
  26. "*HiMoP: A three-components architecture to create more human-acceptable social-assistive robots*" Francisco Javier Rodríguez Lera, Vicente Matellán Olivera, Miguel Ángel Conde, Francisco Martín. *Cognitive Processing*. 2018. [JCR Q4].
  27. "*Benchmark Dataset for Evaluation of Range-Based People Tracker Classifiers in Mobile Robots*" Claudia Álvarez-Aparicio, Ángel Manuel Guerrero-Higuera, Maria Carmen Calvo Olivera, Francisco J. Rodríguez-Lera, Francisco Martín y Vicente Matellán. *Frontiers in Neurorobotics*. 2017.[JCR Q2].
  28. "*Quantitative analysis of security in distributed robotic frameworks*" *Robotics and Autonomous Systems*. Francisco Martín, Enrique Soriano and José María Cañas. Nov 2017.[JCR Q2].
  29. "*Social robots in advanced dementia*", Meritxell Valentí Soler, Luis Agüera-Ortiz, Javier Olazarán Rodríguez, Carolina Mendoza Rebolledo, Almudena Pérez Muñoz, Irene Rodríguez Pérez, Emma Osa Ruiz, Ana Barrios Sánchez, Vanesa Herrero Cano, Laura Carrasco Chillón, Silvia Felipe Ruiz, Jorge López Alvarez, Beatriz León Salas, José María Cañas Plaza, Francisco Martín Rico, Pablo Martínez Martín. *Frontiers in Aging Neuroscience*, Sept. 2015.[JCR Q1].
  30. "*Active Visual Perception for Humanoid Robots*", Francisco Martín, Carlos Agüero y José María Cañas. *International Journal of Humanoid Robotics*. Vol. 912, nº 1, pp 1-22. 2015.[JCR Q4].
  31. "*Multi-modal Active Visual Perception System for SPL Player Robot*", Francisco Martín, Carlos Agüero, José María Cañas y Eduardo Perdices. *Advances in Intelligent Systems and Computing*. Springer. Volume 252, pp 541-556. 2014.
  32. "*Robotherapy in dementia: Pilot study*", Francisco Martín, Carlos Agüero, José María Cañas, Pablo Martínez and Meritxell Valenti et al. *Alzheimers & Dementia*. 2013. [JCR Q1].
  33. "*RoboTherapy with Alzheimer Patients*", Francisco Martín, Carlos Agüero, José María Cañas, Pablo Martínez and Meritxell Valenti. *International Journal of Advanced Robotic Systems: Humanoid*. Vol. 9, pp 1-7. 2012.[JCR Q4].
  34. "*Effective real-time visual object detection*", Francisco Martín and Manuela Veloso. *Progress in Artificial Intelligence*. Springer. Volume 1, Issue 4. pp 259-265. 2012.
  35. "*Portable autonomous walk calibration for 4-legged robots*", Boyan Bonev, Miguel Cazorla, Francisco Martín y Vicente Matellán. *Applied Intelligence*. Vol. 36, Issue 1, pp 136-147. 2012.[JCR Q2].
  36. "*Comparison of Smart Visual Attention Mechanisms for Humanoid Robots*", Francisco Martín, Carlos Agüero, Luis Rubio y José María Cañas. *International Journal of Advanced Robotic Systems: Smart Sensors for Smart Robots*. Volume 9-6, 233-250. 2012. [JCR Q3].
  37. "*An hybrid approach to fast and accurate localisation for legged robots*", Renato Samperio, Housheng Hu, Francisco Martín y Vicente Matellán. *Robotica*. Cambridge University Press. Vol.26(No.6). United Kingdom. 2008.[JCR Q3].
  38. "*Localization of legged robots combining a fuzzy-Markov method and a population of extended Kalman filters*", Francisco Martín, Vicente Matellán, Pablo Barrera, José María Cañas. *Robotica*. Robotics and Autonomous Systems, Volume 55, pp 870-880, 2007.[JCR Q2].
  39. "*Jde-neoc: Component oriented software architecture for robotics*", José María Cañas, Ruiz-Ayucar, J., Carlos Agüero y Francisco Martín. *Journal of Physical Agents*. Vol 1. pp. 1-6. 2007.
  40. "*Multicamera 3D tracking using particle filter*", Francisco Martín, Vicente Matellán, Pablo Barrera, José María Cañas. *IADAT Journal of Advanced Technology on Imaging and Graphics*. Vol 1. pp 13-15. 2005.

## Publicaciones en Congresos Científicos (últimos 8 años)

1. "A ROS2-Based Approach to Enable Simultaneous and Real-Time Tracking of Humans and Exoskeleton Motion" Guillermo Asín-Prieto, Francisco Martín Rico and Diego Torricelli. International Conference on NeuroRehabilitation. 2021.
2. "System Modes - Digestible System (Re-)Configuration for Robotics" Arne Nordmann, Ralph Lange and Francisco Martín Rico. 2021 IEEE/ACM 3rd International Workshop on Robotics Software Engineering (RoSE). 2021.
3. "The Role of Cybersecurity and HPC in the Explainability of Autonomous Robots Behavior" Vicente Matellán Olivera, Francisco Javier Rodríguez-Lera, Ángel Manuel Guerrero-Higuera, Francisco Martín Rico and Jonatan Gines Clavero. 2021 IEEE International Conference on Advanced Robotics and Its Social Impacts (ARSO). 2021.
4. "Using HPC as a Competitive Advantage in an International Robotics Challenge" Claudia Álvarez Aparicio, Jonatan Ginés, Miguel A. Santamarta, Francisco Martín Rico, Ángel M. Guerrero Higuera, Francisco J. Rodríguez Lera, Vicente Matellán Olivera.
5. "Traceability and Accountability in Autonomous Agents" Francisco Javier Rodríguez-Lera, Miguel Ángel González Santamarta, Ángel Manuel Guerrero, Francisco Martín, Vicente Matellán. Conference on Complex, Intelligent, and Software Intensive Systems. 2020.
6. "Adapting ROS Logs to Facilitate Transparency and Accountability in Service Robotics" Francisco J Rodríguez Lera, Angel Manuel Guerrero Higuera, Vicente Matellan Olivera, Francisco Martín Rico, Jonathan Gines and Juan Felipe García Sierra. ROBOT2019, published in Springer - Advances in Intelligent Systems and Computing series. November 2019.
7. "Using Probabilistic Context Awareness in a Deliberative Planner System" JG Clavero, Francisco J. Rodríguez Lera, Francisco Martín Rico, Angel Manuel Guerrero, Vicente Matellán. International Work-Conference on the Interplay Between Natural and Artificial Computation, IWINAC 2019
8. "Artificial Semantic Memory with Autonomous Learning applied to Social Robots" Francisco Martín-Rico, Francisco Gomez-Donoso, Felix Escalona, Miguel Cazorla, Jose Garcia-Rodriguez. International Work-Conference on the Interplay Between Natural and Artificial Computation, IWINAC 2019
9. "LIDAR-based people detection and tracking for @ home Competitions" Claudia Álvarez-Aparicio, Ángel M Guerrero-Higuera, Francisco J Rodríguez-Lera, M Carmen Calvo Olivera, Vicente Matellán Olivera, Jonatan Ginés Clavero, Francisco Martín Rico. 2019 IEEE International Conference on Autonomous Robot Systems and Competitions (ICARSC). 2019
10. "Planning-centered Architecture for RoboCup SSPL @Home". Francisco Martín, Jonathan Ginés, David Vargas, Francisco J. Rodríguez-Lera, Vicente Matellán. WAF2018, published in Advances in Intelligent Systems and Computing series. November 2018.
11. "Planning Topological Navigation for complex Indoor Environments". Francisco Martín, Jonathan Ginés, David Vargas, Francisco J. Rodríguez-Lera, Vicente Matellán. 2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2018), October 2018. **[CORE A+]**
12. "Generating Symbolic Representation from Sensor Data: Inferring knowledge in Robotics Competitions". Francisco J. Rodríguez Lera, Francisco Martín Rico y Vicente Matellán Olivera. 18th International Conference on Autonomous Robot Systems and Competitions (ICARSC 2018). Torres Vedras, Portugal, April 2018.
13. "3D mapping for a reliable long-term navigation". Jonathan Ginés Clavero, Francisco Martín Rico, Vicente Matellan Olivera, Francisco J. Lera and Jesus Balsa. Robot'2017: 3rd Iberian Robotics Conference, published in Springer - Advances in Intelligent Systems and Computing. 22-24 November 2017, Sevilla (Spain).
14. "Practical aspects of deploying Robototherapy". Francisco Martín Rico and Jonathan Ginés Clavero. Robot'2017: 3rd Iberian Robotics Conference, published in Springer - Advances in Intelligent Systems and Computing. 22-24 November 2017, Sevilla (Spain).
15. "Context Awareness in shared human-robot Environments: Benefits of Environment Acoustic Recognition for User Activity Classification". Francisco J. Rodríguez-Lera, Francisco Martín Rico, Vicente Matellán. 8th International Conference on Pattern Recognition Systems (ICPRS 2017). 11-13 July 2017, Madrid, (Spain).
16. "Deep Learning and Bayesian Networks for Labelling User Activity Context Through Acoustic Signals", Francisco Rodríguez Lera, Francisco Martín Rico and Vicente Matellan Olivera. IWINAC. International Work-conference on the Interplay between Natural and Artificial Computation. A Coruña (Spain). June 2017
17. "Dynamics maps for long-term autonomy", Jonathan Ginés Clavero, Francisco Martín Rico, Vicente Matellan Olivera, Francisco J. Lera and Jesus Balsa. 17th International Conference on Autonomous Robot Systems and Competitions (ICARSC 2017). Coimbra (Portugal). May 2017.
18. "Open Source Robotics Course at Engineering: Infrastructure and Methodology", Francisco Martín Rico. 8th International Conference on Robotics in Education, RiE 2017, Sofia, April 27-29, 2017.

19. "Cybersecurity in Autonomous Systems: Evaluating the performance of hardening ROS", Francisco Javier Rodríguez Lera, Jesús Balsa, Fernando Casado, Camino Fernández, Francisco Martín Rico, and Vicente Matellán. Workshop en Agentes Físicos, pp. 47-54. 16-17 June 2016. Málaga (Spain).
20. "Multi-thread impact on the performance of Monte Carlo based algorithms for self-localization of robots using RGB-D sensors.", Francisco Martín, Vicente Matellán and Francisco J. Rodríguez Lera. Workshop en Agentes Físicos. 16-17 June 2016. Málaga (Spain).
21. "A motivational architecture to create more human-acceptable assistive robots for robotics competitions", Francisco Rodríguez Lera, Vicente Matellán, Miguel Ángel Conde, and Francisco Martín Rico. IEEE International Conference on Autonomous Robot Systems and Competitions (ICARSC'2016), 4-6 May 2016. Bragança (Portugal).
22. "Design and Evaluation of a Low-Cost Robotic Arm for @Home Competitions", Francisco Rodríguez Lera, Fernando Casado, Vicente Matellán, and Francisco Martín Rico. Volume 418 of the series Advances in Intelligent Systems and Computing pp 623-634. Actas del Robot 2015: Second Iberian Robotics Conference (2016)
23. "SIRVAMED: Development of a comprehensive robotic system for monitoring and interaction for people with acquired brain damage and dependent people", Miguel Cazorla, Jose Garcia-Rodriguez, Jose Maria Cañas Plaza, Ismael Garcia-Varea, Vicente Matellán, Francisco Martín-Rico, Jesus Martínez-Gomez, Francisco Javier Rodríguez Lera, Cristina Suarez Mejias and Maria Encarnación Martínez Sahuquillo. CAEPIA'2015 Conferencia de la Asociación Española para la Inteligencia Artificial (CAEPIA).
24. "Analysis and Evaluation of a Low-Cost Robotic Arm for @Home Competitions", Francisco J. Lera, Fernando Casado, Vicente Matellán y Francisco Martín Rico. ROBOT'2015 Second Iberian Robotics Conference.
25. "Visual Localization based on Quadtrees", Francisco Martín Rico, ROBOT'2015 Second Iberian Robotics Conference.
26. "A Simple, Efficient, and Scalable Behavior-based Architecture for Robotic Applications", Francisco Martín Rico, Carlos E. Agüero Durán. ROBOT'2015 Second Iberian Robotics Conference.

**(49 en total)**

## Proyectos

1. "Integración y validación con hardware enlazado del guiado, navegación y control de operaciones orbitales de proximidad empleando inteligencia artificial." IP: Hodei Urrutxa. Agencia Estatal de Investigación. 01/12/2022 - 30/11/2024.
2. "CoreSense". IP: Francisco Martín Rico. European Commission - Horizon Europe. 01/10/2022 - 30/09/2026.
3. "AIPLAN4EU - UPF4ROS" IP: Francisco Martín Rico. PLAN4EU Focused Technical Project (European Commission - Horizon Europe) 08/09/2022 - 31/12/2023.
4. "Ciberseguridad y Seguridad en Arquitecturas Cognitivas para Robots" IP: Francisco Martín Rico. Agencia Estatal de Investigación. 01/09/2022 - 31/08/2025
5. "ARViz: Augmented Reality Visualizer por ROS/ROS2.". IP: Francisco Martín Rico. ROSIN Focused Technical Project (European Commission - H2020) 02/07/2018 - 31/12/2019.
6. "MROS: Metacontrol for ROS2 Systems". IP: Francisco Martín Rico. RobMoSys Integrated Technical Project. (European Commission - H2020) 01/10/2019 - 30/09/2020.
7. "MOCAP4ROS2". IP: Francisco Martín Rico. ROSIN Focused Technical Project (European Commission - H2020). 17/12/2019 - 31/12/2020.
8. "Planning4Papyrus". IP: Francisco Martín Rico. RobMoSys Experts Intake Project. (European Commission - H2020). 01/04/2020-01/11/2020.
9. "ACTROS: Advanced Center for Training ROS". IP: Francisco Martín Rico. ROSIN Educational Project (European Commission - H2020) 01/01/2020 - 31/12/2020.
10. RTI2018-100683-B-I00 "Detección y caracterización automática de problemas de ciberseguridad en plataformas robóticas". IP: Camino Fernández Llamas. (Plan Nacional). 01/01/2020 - 31/12/2021.
11. TIN2016-76515-R. "Retorno al hogar: Sistema de mejora de la autonomía a personas con daño cerebral adquirido y dependientes en su integración en la sociedad". IP: Miguel Cazorla Quevedo. (MINECO). 01/01/2017-31/12/2019.
12. DPI2013-40534-R, SIRMAVED: "Development of a comprehensive monitoring and interactive robotic system for people with acquired brain damage and dependent people". IP: Miguel Cazorla. (MINECO). 01/01/2013-31/12/2016.
13. PI10/02567. "Roboterapia en Demencia". IP: Jose María Cañas Plaza. (Universidad Rey Juan Carlos). 01/01/2011-31/12/2013.
14. 2010/00109/001, "Robots de servicios para la calidad de vida de los ciudadanos en áreas metropolitanas.Robocity2030-II". IP: Jose María Cañas Plaza. (Comunidad de Madrid). 01/01/2010-31/12/2013.

15. DPI2007-66556-C03-01, "Generación de comportamientos cooperantes en Grupos de Robots móviles". IP: Jose María Cañas Plaza. (CICYT). 01/10/2007- 03/08/2010.
16. S-0505/DPI/0176, "RoboCity 2030". IP: Jose María Cañas Plaza. (Universidad Rey Juan Carlos). 01/01/2006-31/12/2009.
17. URJC-CM-2007-CET-1694, "MAVROM: Mecanismos de Atención visual en robots móviles" IP: Jose María Cañas Plaza. (Universidad Rey Juan Carlos). 01/01/2008-31/12/2008.
18. CCT005-06-00275, Robocampeones 2007 Jose María Cañas Plaza. (Comunidad de Madrid). 01/01/2007-31/12/2007.
19. DPI2004-07993-C03-01, "ACRACE: Arquitectura para el control de robots autónomos cooperantes basada en esquemas" IP: Vicente Matellán Olivera. (CICYT). 13/12/2004-13/12/2007.

## **Contratos (últimos 5 años )**

1. "Asesoría en ROS2" IP: Francisco Martín Rico. 22/02/2023 - 21/05/2023.
2. "Asistencia técnica de ROS para EUROBENCH". CSIC. IP: Francisco Martín Rico. 01/10/2020 - 31/03/2021. 3.000€
3. "Asesoría y desarrollo de componentes robóticos en ROS". Seertems Robótica y Sistemas S.L. IP: Francisco Martín Rico. 07/11/2019 - 06/11/2020. 5.000€
4. "Deep learning aplicado a la robótica aérea" Aeronautica industrial y desarrollo de sistemas s.l. IP: Francisco Martín Rico. 11/06/2018-31/12/2020. 58.000 €.
5. "Aplicación del Robot Pepper como recepcionista". Acciona S.A. IP: Francisco Martín Rico. 15/11/2017 - 15/12/2019. 70.601,89€.
6. "Curso de ROS". Psikya Tecnología Social. IP: Francisco Martín Rico. 01/10/2017-31/10/2017. 1362€.
7. "Desarrollo de inteligencia artificial en robots aplicados al tratamiento del Alzheimer y la demencia" Datahack. IP: Francisco Martín Rico. 23/05/2018-P2Y. 17.805 €.
8. "Roboterapia Asistencial" CLECE, S.A.. Francisco Martín Rico. 15/12/2015-01/09/2018. 40.746,71 €.