MINISTERIO
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AGENCIA
ESTATAL DE
INVESTIGACIÓN

Part A. PERSONAL INFORMATION

CV date	05/09/2021

First and Family name	Francisco Martín Rico		
Social Security, Passport, ID number	75232112D	Age	44
Researcher codes	WoS Researcher ID (*)	G-2516-2016	
	Open Researcher and Contributor ID (ORCID**)	0000-0003-3121-5744	

(*) Mandatory

A.1. Current position

Name of University/Institution	Universidad Rey Juan Carlos (URJC)		
Department	Department of Signal Theory and Telematic Systems and Computation		
Address and Country	C/ Camino del Molino, 5, room 113-III		
Phone Number	+34 679827118	francisco.rico@urjc.es	
Current Position	Full Professor /Catedrático de Universidad	From	04/05/20233
Key words	Robotics, Artificial Intelligence, Middleware for Robots		

A.2. Education

PhD, Licensed, Graduate	University/Country	Year
PhD	Universidad Rey Juan Carlos	2008
Computer Science Engineering	Universidad Rey Juan Carlos	2002

A.3. General indicators of quality of scientific production (see instructions)
Number of sexenios: 3, date last: January 2021
PhD theses advised last 10 years: 1
Q1 publications: 11 in 2018-2023
Google scholar: citations 1111, since 2018: 845, citations/year since 2018: 169, hindex total= 15, since 2018= 13 , i10index total 23, since 2018: 16

Part B. CV SUMMARY

Doctor in Robotics in 2008 from the Rey Juan Carlos University, where my research activity has focused on Mobile Robotics and the development of intelligent behaviors for robots.
My main lines of research have been Assistive Robotics and cognitive architectures in Robots. In Assistance Robotics, I was a pioneer in 2009 in using mobile robots to enhance the effects of cognitive therapies in patients with dementia. Regarding Cognitive Architectures, I have developed an intense line of research in individual and group robots, developing cognitive abilities in Robots. As a testbed, I have participated for 15 years in autonomous robot competitions (RoboCup, European Robotics League, ...).
I have a six-year period of research (last accepted 2015-2020) and a six-year period transfer evaluation. I have supervised 1 PhD in the last 5 years. I have published around thirty articles in international journals and high-impact conferences (7 in Q1) and congresses (4 in Class 1) and about 100 articles in national and international conferences and workshops. In the last 5 years, my h-index is 10 with 536 cites (Google Scholar). I have continuously participated in national projects from 2004 to 2019 (CiCyT, Mineco ...). I have been IP of 6 short cascade-funding and 1 full projects of the European H2020 program. I have been IP in the last four years of 7 projects with private companies for funding superior to € 150K.

At present, I am a member of ROS (Robotics Operating System, the *de facto* standard for programming robots) 2 Technical Steering Committee, which is why I participate in several European projects as an advisor and expert in this technology. He is currently involved in 3 proposals for the Horizon Europe program as IP related to this technology.

Part C. RELEVANT MERITS
C.1. Publications

1. N. Fernández Talavera, Juan Jesús Roldán-Gómez, Francisco Martín, M. C. Rodriguez-Sanchez. An autonomous ground robot to support firefighters' interventions in indoor emergencies. Journal on Field Robotics. 2023. JCR Q1.

2. Jonatan Gines Clavero, Francisco Martín Rico, Francisco J. Rodríguez-Lera, José Miguel Guerrero Hernandéz and Vicente Matellán Olivera. Impact of decision-making system in social navigation. Multimedia Tools and Applications. 2022. JCR Q2.

3. Francisco J. Rodríguez-Lera, Miguel A. Santamarta, Ángel M. Guerrero Higueras, Francisco Martín Rico, Vicente Matellán Olivera. Towards explainability in robotics: a performance analysis of a cloud accountability system. Journal on Expert Systems. 2022. JCR Q2

4. Francisco J. Rodríguez Lera, David Fernández González, Francisco Martín Rico, Ángel Manuel Guerrero-Higueras and Miguel Ángel Conde (3/5). Measuring Students Acceptance and Usability of a Cloud Virtual Desktop Solution for a Programming Course. Journal on Applied Sciences. 11(15). 2021. JCR Q2

5. Francisco Martín Rico; Jonatan Ginés Clavero; Francisco J. Rodriguez Lera; Angel Manuel Guerrero Higueras; Vicente Matellán Olivera. (1/5). 2021. Client-server approach for managing visual attention, integrated in a cognitive architecture for a social robot Frontiers in Neurorobotics. JCR Q2.

6. Francisco Martín Rico; Fernando González Ramos; Guerrero, J.M.; Manuel Fernández Carmona; Jonatan Ginés Clavero. (1/5). 2021. Semantic 3D Mapping from Deep Image Segmentation Applied Sciences. 11/14. ISSN 2076-3417. JCR Q2.

7. Francisco Martín Rico; Francisco J. Rodríguez Lera; Jonatan Ginés Clavero; Vicente Matellán Olivera. (1/4). 2020. Evolution of a Cognitive Architecture for Social Robots: Integrating Behaviors and Symbolic Knowledge Applied Sciences. 10/17. ISSN 2076-3417. JCR Q2.

8. Francisco J. Rodríguez Lera; Jonatan Ginés Clavero; Francisco Martín Rico; Ángel Manuel Guerrero Higueras; Vicente Matellán Olivera. (3/5). 2020. Depicting probabilistic context awareness knowledge in deliberative architectures Natural Computing. ISSN 1567-7818. JCR Q3.

9. Francisco Martín Rico; Francisco J. Rodríguez Lera; Jonatan Ginés Clavero; Ángel Manuel Guerrero Higueras; Vicente Matellán Olivera. (1/5). 2020. An Acceptance Test for Assistive Robots Sensors. 20/3912. ISSN 1424-8220. JCR Q1.

10. Francisco Martín Rico; Francisco Gómez Donoso; Félix Escalona; José García Rodríguez; Miguel Cazorla Quevedo. (1/5). 2020. Semantic visual recognition in a cognitive architecture for social robots Integrated Computer-Aided Engineering. 27/3, pp.301-316. ISSN 1069-2509. JCR Q1.

11. Francisco J. Rodríguez Lera; Francisco Martín Rico; Ángel Manuel Guerrero Higueras; Vicente Matellán Olivera. (2/4). 2019. A Context-Awareness Model for Activity Recognition in robot-assisted scenarios. Journal on Expert Systems. 37/2. ISSN 0266-4720. JCR Q2.

12. Jonathan Ginés, Francisco Martín Rico, David Vargas, Francisco J. Rodriguez Lera and Vicente Matellán Olivera (2/5). 2019. A Social Navigation in a Cognitive Architecture Using Dynamic Proxemic Zones. Journal on Sensors. 19(23). ISSN: 1424-8220. JCR Q1.

13. Ángel Manuel Guerrero Higueras; Claudia Álvarez Aparicio; María Carmen Calvo Olivera; Francisco J. Rodríguez Lera; Camino Fernández Llamas; Francisco Martín Rico; Vicente Matellán Olivera. (6/7). 2019. Tracking People in a Mobile Robot From 2D LIDAR Scans Using Full Convolutional Neural Networks for Security in Cluttered Environments. Frontiers in Neurorobotics. 11, pp.1-85. JCR Q2.

14. Francisco Martín Rico; Vicente Matellán Olivera; Francisco J Rodríguez Lera; Jonatan Ginés Clavero. (1/4). 2019. Octree-based localization using RGB-D data for indoor

robots Engineering Applications of Artificial Intelligence. 77, pp.177-185. ISSN 0952-1976. JCR Q1.

15. 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 Martin-Rico (16/18). COMBAHO: A Deep Learning System for Integrating Brain Injury Patients in Society. 2020, Pattern Recognition Letters. 137. ISSN: 0167-8655. JCR Q2

16. Francisco Martín Rico; Vicente Matellán Olivera; Francisco J Rodríguez Lera. (1/3). 2018. Neural Networks for Recognizing Human Activities in Home-like Environments Integrated Computer-Aided Engineering. ISSN 1069-2509. JCR Q1

17. Francisco Martín Rico; Enrique Soriano Salvador; Jose María Cañas Plaza. (1/3). 2018. Quantitative analysis of security in distributed robotic frameworks Robotics and Autonomous Systems. 100, pp.95. ISSN 0921-8890. JCR Q2.

18. Francisco Martín Rico; Meritxel Valenti; Jose María Cañas Plaza; Pablo Martínez. (1/4).2015 Social robots in advanced dementia Frontiers in Aging Neuroscien.JCR Q1.

19. Claudia Álvarez-Aparicio, Ángel Manuel Guerrero-Higueras, Maria Carmen Calvo Olivera, Francisco J. Rodríguez-Lera, Francisco Martín y Vicente Matellán (5/6). 2017. Benchmark Dataset for Evaluation of Range-Based People Tracker Classifiers in Mobile Robots. Frontiers in Neurorobotics. ISSN: 1662-5218. JCR Q2

20. 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 (15/16). 2015. Social robots in advanced dementia. JCR Q1.

21. Boyan Bonev, Miguel Cazorla, Francisco Martín y Vicente Matellán. (3/4). Portable autonomous walk calibration for 4-legged robots. 2012.Applied Intelligen.36-1.JCR Q2.

22. Francisco Martín, Carlos Agüero, Luis Rubio y José María Cañas. (1/4). Comparison of Smart Visual Attention Mechanisms for Humanoid Robots. 2012. International Journal of Advanced Robotic Systems: Smart Sensors for Smart Robots. 9-6. JCR Q3.

23. Renato Samperio, Housheng Hu, Francisco Martín y Vicente Matellán. (3/4). An hybrid approach to fast and accurate localisation for legged robots. Robotica. 26-6. JCR Q3.

24. Francisco Martín, Vicente Matellán, Pablo Barrera, José María Cañas. (1/4). Localization of legged robots combining a fuzzy-Markov method and a population of extended Kalman filters. Robotics and Autonomous Systems.55.JCR Q2.

C.2. Congress

1. Steve Macenski, Shrijit Singh, Francisco Martin, Jonatan Gines. Regulated pure pursuit for robot path tracking. Proceedings of the 2022 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2023), 2023. Class 1 Conference.

2. Francisco Martín Rico, Matteo Morelli, Huascar Espinoza, Francisco J. Rodríguez-Lera, Vicente Matellán Olivera. Optimized Execution of PDDL Plans using Behavior Trees. Proceedings of the 20th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS 2021). 2021. Class 2 Conference.

3. Francisco Martín Rico, Matteo Morelli, Huascar Espinoza, Francisco J. Rodríguez-Lera, Vicente Matellán Olivera. Optimized Execution of PDDL Plans using Behavior Trees. Proceedings of the 20th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS 2021). 2021. Class 2 Conference.

4. Francisco Martín Rico, Jonathan Ginés, Vicente Matellán Olivera and Francisco Javier Rodríguez-Lera. PlanSys2: A Planning System Framework for ROS2. Proceedings of the 2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2021), 2021. Class 1 Conference.

5. Steven Macenski, Francisco Martín Rico, Ruffin White, Jonathan Ginés. The Marathon 2: A Navigation System. Proceedings of the 2020 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2020), 2020. Class 1 Conference.

6. Francisco Martín, Jonathan Ginés, David Vargas, Francisco J. Rodríguez-Lera, Vicente Matellán. Planning Topological Navigation for complex Indoor Environments.

2018 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2018), October 2018. Class 1 Conference.

C.3. Research projects

1. DPI2004-07993-C03-01. ACRACE: Arquitectura para el control de robots autónomos cooperantes basada en esquemas. Ministerio de Educación y Ciencia. Vicente Matellán Olivera. 2004-2007. 74.115 €
2. S-0505/DPI/0176. RoboCity: Robots de servicios para la calidad de vida de los ciudadanos en áreas metropolitanas. Comunidad de Madrid. José María Cañas Plaza. 2006-2010. 36.002,05 €
3. DPI2007-66556-C03-01. COCOGROM: Generación de Comportamientos Cooperantes en Grupos de Robots Móviles. Ministerio de Educación y Ciencia. Vicente Matellán Olivera. 2007-2010. 150.474,25 €.
4. S2009/DPI-1559. RoboCity II: Robots de servicios para la calidad de vida de los ciudadanos en áreas metropolitanas. Comunidad de Madrid. José María Cañas Plaza. 2010-2013. 36.000 €
5. 10/02567. Roboterapia en Demencia. FIS (Fondo Investigación en Salud). José María Cañas Plaza. 2010-2013. 33.112,86 €
6. DPI2013-40534-R. SIRVAMED: Desarrollo de un Sistema Integral Robótico de monitorización e Interacción para Personas con Daño Cerebral Adquirido y Dependientes. Ministerio de Economía. Miguel Cazorla Quevedo. 2013-2015. 90.000 €.
7. S2013/MIT-2748. RoboCity III: Robots de servicios para la calidad de vida de los ciudadanos en áreas metropolitanas. Comunidad de Madrid. José María Cañas Plaza. 2014-2018. 38.467,96 €
8. TIN2016-76515-R. RETOGAR: Retorno al Hogar: Sistemas de Mejora de la Autonomía de Personas con Daño Cerebral Adquirido y Dependientes en su Integración en la Sociedad. Ministerio de Economía. Miguel Cazorla Quevedo. 2013-2015. 93.200 €.
9. Augmented Reality Visualizer por ROS/ROS2. (ARViz) ROSIN Focused Technical Project. H2020 (European Comission). Francisco Martín Rico. 2018-2019. 30.375 €
10. MROS – RobMoSys. H2020 (European Commission). Francisco Martín Rico. 2019-2021. 60.122 €.
11. MOCAP4ROS2. ROSIN Focused Technical Project. H2020 (European Commission). Francisco Martín Rico. 2019-2021. 26.680 €
12. Center for Advanced Training on Robotics and Open Source (ACT-ROS). ROSIN Educational Project. H2020 (European Commission). Francisco Martín Rico. 2020-2021. 25.930 €
13. Planning4Papyrus - Guidelines for Improving Papyrus for Robotics with PDDL Planning - RobMoSys. H2020 (European Commission). Francisco Martín Rico. 2020-2021. 20.000 €.
14. UPF4ROS2. AIPlan4EU Cascade Project. Horizont Europe (European Commission). Francisco Martín Rico. 2022-2023. 60.000 €
15. CoreSense - A Hybrid Cognitive Architecture for Deep Understanding. Horizont Europe (European Commission). Francisco Martín Rico. 2022-2025. 706.988 €

C.4. Interdisciplinarity

My interdisciplinarity is evident in the application of robots for therapies for Alzheimer's patients, which constitutes one of my three main lines of research, along with M'boil Robotics and Artificial Intelligence. During the 2010s, together with a group of psychologists and neurologists from the CIEN Foundation (Center for Research in Neurological Diseases), I designed and implemented a humanoid robot in software to stimulate the attention of dementia patients, which resulted in two national projects and several high-impact publications. This research transferred knowledge to the private sector through several contracts with care companies to bring it to nursing homes. The rest of my research activity combines mobile robotics problems (navigation, localization, among others) with the study of Artificial Intelligence (Symbolic AI Planning, task planning, Cognitive Architectures) and its application in social robots to help humans in domestic environments.