

Part A. PERSONAL INFORMATION

CV date

08/12/2020

First and Family name	CONCEPCIÓN ALICIA MONJE MICHARET		
Researcher codes	Open Researcher and Contributor ID (ORCID**)	0000-0001-8295-127X	
	SCOPUS Author ID (*)		
	WoS Researcher ID (*)		

(*) *Optional*

(**) *Mandatory*

A.1. Current position

Name of University/Institution	UNIVERSIDAD CARLOS III DE MADRID (UC3M)		
Department	INGENIERÍA DE SISTEMAS Y AUTOMÁTICA		
Address and Country	AVENIDA UNIVERSIDAD 30, 28911 LEGANÉS, MADRID		
Phone number	916246013	E-mail	cmonje@ing.uc3m.es
Current position	Associate Professor	From	04/09/2017
Keywords	Soft robotics, Humanoids, Fractional order control, Intelligent control, AUVs, Path Planning		

A.2. Education

PhD, Licensed, Graduate	University	Year
PhD in Industrial Engineering (Control and Robotics)	Universidad de Extremadura (UEX)	2006
Electronics Engineering	Universidad de Extremadura (UEX)	2001
Technical Industrial Engineering in Electronics	Universidad de Extremadura (UEX)	1999

A.3. General indicators of quality of scientific production (see instructions)

Number of six-year research terms acknowledged by ANECA (Sexenios): 3 (last in 2020), 1 relative.

Number of research terms acknowledged by UC3M (Complementos de investigación retributivos de la UC3M): 2 (2016-2018, 2018-2020)

Number of research terms acknowledged by CAM (Complementos de investigación retributivos de la Comunidad Autónoma de Madrid (CAM)): 15 (2006 a 2020)

PhD Theses read: 4

PhD Theses in progress: 4

Total number of citations: 5197 (+560/year, last five years) (Google Scholar)

h index: 23 (Google Scholar)

i10 index: 33 (Google Scholar)

ResearchGate Score: 25,79

Total number of JCR-ranked publications: 42

Total number of Q1 JCR-ranked publications: 12

Total number of Q2 JCR-ranked publications: 7

Total number of Q3 JCR-ranked publications: 13

Total number of Q4 JCR-ranked publications: 10

Total number of books: 1 (2321 cites)

Total number of book chapters: 5

Total number of other indexed publications: 6

Total number of conference publications: +70

Total number of publications: +120

Total number of competitive European projects: 9 (PI: 1)

Total number of competitive national projects: 8 (PI: 1)

Total number of competitive regional projects: 7

Total number of contracts: 21 (PI: 14)

Total number of projects being PI: 16

Total number of national and regional funds for projects preparation: 22



Patents: 1

Part B. CV SUMMARY (*max. 3500 characters, including spaces*)

Teaching Positions: **1.** Associate Professor: 2017 (UC3M); **2.** Visiting Professor: 2012-2017 (UC3M); **3.** Juan de la Cierva Research Grant (UC3M): 2009-2012; **4.** Visiting Professor (UC3M): 2006-2008; **5.** FPI Research Grant (Universidad de Extremadura): 2002-2006; **6.** Starting Research Grant (Universidad de Extremadura): 2001

Academic Positions: **1.** Deputy Director of Promotion and Dissemination of the UC3M School of Engineering (from 2020); **2.** Director of the Center for Aeronautical Training and Services – CATS-UC3M (from 2012); **3.** Secretary of the Systems Engineering and Automation Department – UC3M (24/05/2011-18/05/2015).

Teaching activities: **1.** Teaching activities in Engineering Degrees, Masters and companies: +15 years; **2.** Recognitions of the teaching quality: +30; **3.** Supervisor of PhD Thesis: 8; **4.** Supervisor of Final Degree/Master Projects and others: +100; **5.** Evaluation Committee for PhD Theses, Final Degree/Master Projects: +150; **6.** Teaching innovation activities: +25

Part C. RELEVANT MERITS (*sorted by typology*)

C.1. Publications (*see instructions*)

[1] J. Muñoz, D.S. Copaci, C.A. Monje, D. Blanco and C. Balaguer, Iso-m based Adaptive Fractional Order Control with Application to a Soft Robotic Neck, *IEEE Access*, Vol. 8, pp. 198964-198976, 2020. **Q1**

[2] D. Copaci, J. Muñoz, I. González, C.A. Monje and L. Moreno, SMA-Driven Soft Robotic Neck: Design, Control and Validation, *IEEE Access*, Vol. 8, pp. 199492-199502, 2020. **Q1**

[3] Jorge Muñoz, Concepción A. Monje, Luis F. Nagua, Carlos Balaguer, A Graphical Tuning Method for Fractional Order Controllers based on Iso-Slope Phase Curves, *ISA Transactions*, Vol. 105, pp. 296-307, 2020. **Q1**.

[4] S. Garrido, C.A. Monje, F. Martín, L. Moreno, Design of Fractional Order Controllers using the PM Diagram, *Mathematics*, Vol. 8, No. 11, pp. 1-18, 2020. **Q1**

[5] J. Muñoz, C.A. Monje, S. Martínez de la Casa, C. Balaguer, Joint Position Control based on Fractional Order PD and PI Controllers for the Arm of the Humanoid Robot TEO, *International Journal of Humanoid Robotics*, Vol. 16, No. 6, pp. 1950042-1 - 1950042-20, 2020. **Best Paper Award. Q4**

[6] F. Martín, C.A. Monje, L. Moreno, C. Balaguer, DE-based Tuning of PI λ D μ Controllers, *ISA Transaction*, Vol. 59, pp. 398-407, 2015. **Q1**

[7] A. Tepljakov, E.A. González, E. Petlenkov, J. Belikov, C.A. Monje, I. Petráš, Incorporation of Fractional-Order Dynamics into an Existing PI/PID DC Motor Control Loop, *ISA Transactions*, Vol.60, pp. 262-273, 2016. **Q1**

[8] V. Haji Haji, C.A. Monje, Fractional-Order PID Control of a Chopper-Fed DC Motor Drive Using a Novel Firefly Algorithm with Dynamic Control Mechanism, *Soft Computing*, Vol. 22, No. 18, pp. 6135-6146, 2017. **Q2**

[9] Y. Luo, Y.Q. Chen, Y. Pi, C.A. Monje, B. M. Vinagre, Optimized Fractional Order Conditional Integrator, *Journal of Process Control*, Vol. 21, No. 6, pp. 960-966, 2011. **Q1**

[10] C.A. Monje, Y.Q. Chen, B.M. Vinagre, D. Xue, V. Feliu, *Fractional-order Systems and Controls. Fundamentals and Applications*, Springer, 2010. ISBN: 978-1-84996-334-3

C.2. Research projects

1. LABYRINTH: Unmanned traffic management 4D Path Planning technologies for drone swarm to enhance safety and security in transport. Ref. 861696, H2020-MG-2018-2019-2020 (Mobility for Growth), 01/06/2020-31/05/2023. PIs: Luis Moreno (RoboticsLab, UC3M), Francisco Varela (Netcom Lab, UC3M). Participation type: Researcher. 600,000 Euros (Global: 5.291.805 euros).

2. HUMASoft: Diseño y control de eslabones blandos para robots humanoides. Ref. DPI2016-75330-P, Ministry of Economy, Industry and Competitiveness, 31/12/2016-31/12/2020. PI: Concepción Alicia Monje Micharet (UC3M). 169,400 Euros.

3. RoboCity2030-DIH-CM. Madrid Robotics Digital Innovation Hub. Ref. S2018/NMT4331, Comunidad Autónoma de Madrid (Regional funding), 01/01/2019-



31/12/2020, PI: Carlos Balaguer Bernaldo de Quirós (UC3M). Participation type: Researcher. 162,150 Euros.

4. ROBOCOM++: Rethinking robotics for the robot companion of the future. Ref. 2017/00059/001, European Commission, Type ERANET, Subtype FLAG-ERA Joint Transnational Call 2016, 01/03/2017-29/02/2020. Coordinator: Paolo Dario, Scuola Superiore Sant'Anna, The BioRobotics Institute, Italy; co-PIs: Concepción Alicia Monje Micharet (UC3M), Carlos Balaguer Bernaldo de Quirós (UC3M).

5. STAMS: Long-term stability assessment and monitoring of flooded shafts. Ref. RFCS-GA-RFCR-CT-2015-00002, H2020, 01/07/2015-30/06/2018. PI: Carlos Balaguer Bernaldo de Quirós (UC3M). Participation type: Researcher. 261,860 Euros.

6. ROBOHEALTH-A: Desarrollo de robots de asistencia de pacientes para mejorar su calidad de vida. Ref. DPI2013-47944-C4-1-R, Ministry of Economy, Industry and Competitiveness, 01/01/2014-31/12/2016. PIs: Carlos Balaguer Bernaldo de Quirós (UC3M), Luis Moreno (UC3M). Participation type: Researcher. 135,520 Euros.

7. ROBOSPECT: Robotic system with intelligent vision and control for tunnel structural inspection and evaluation. Ref. FP7-ICT-2013-10-611145, European Commission (FP7), 01/10/2013-30/09/2016. PI: Carlos Balaguer Bernaldo de Quirós (UC3M). Participation type: Researcher. 405,330 Euros.

8. MONARCH: Multi-robot cognitive systems operating in hospitals. Ref. FP7-ICT-2011-9-601033, European Commission (FP7), 01/02/2013-31/01/2016. PI: Miguel Ángel Salichs (UC3M). Participation type: Researcher. 532,391 Euros.

9. ARCADIA: Asistente robótico cognitivo para personas con necesidades especiales. Ref. DPI2010-21047-C02-01, Ministry of Economy, Industry and Competitiveness, 01/01/2011-31/12/2014. PI: Carlos Balaguer Bernaldo de Quirós (UC3M). Participation type: Researcher. 278,300 Euros.

10. Robot@CWE: Advanced robotic systems in future collaborative working environments. Ref. FP6-IST-2006-034002, European Commission (FP6, STREP Project), 01/11/2006-31/10/2009. PI: Carlos Balaguer Bernaldo de Quirós (UC3M). Participation type: Researcher. 193,566 Euros.

C.3. Contracts, technological or transfer merits

1. Diseño, desarrollo y validación en entorno real de un sistema automatizado para inspección, limpieza y mantenimiento de las palas de aerogeneradores marinos. Ref. 2018/00475/001, Company: Arquimea Ingeniería, S.L.U., 26/09/18-25/12/2019. PIs: Concepción Alicia Monje Micharet (UC3M), Juan Carlos González Vítores (UC3M). 87,514 Euros.

2. Administración y Evaluación de las Pruebas Feast de Eurocontrol para Candidatos a Controlador Aéreo de la Empresa SAERCO. Ref. 2017/00289/001, Company: SAERCO, 01/05/2017-30/04/2019. PI: Concepción Alicia Monje Micharet (UC3M). 12,000 Euros.

3. Control de un eje de locomoción de un vehículo rover para exploración en Marte. Ref. 2016/00315/001, Company: Thales Alenia Space España, S.A., 22/06/2016-30/12/2016. PIs: Concepción Alicia Monje Micharet (UC3M), María de los Ángeles Malfaz Vázquez (UC3M). 6,188 Euros.

4. Análisis y especificaciones de la actividad Aérea vinculada a UAVs. Ref. 2016/00343/001, Company: Ommeron Aeronáutica, S.L., 01/06/2016-30/11/2016. PI: Concepción Alicia Monje Micharet (UC3M). 3,150 Euros.

5. Especificación técnica para desarrollo de programa formativo de Mecatrónica. Nº pedido A9750659G. Ref. 2016/00329/001, Company: Airbus Operations, S.L., 29/04/2016-29/07/2016. PIs: Concepción Alicia Monje Micharet (UC3M), Santiago Martínez de la Casa Díaz (UC3M). 15,000 Euros.

6. Especificación técnica para desarrollo de programa formativo para programación y control de robots. Ref. 2014/00587/001, Company: Airbus Operations, S.L., 28/11/2014-27/01/2015. PI: Alberto Jardón Huete (UC3M). 11,388 Euros.

7. Herramienta de apoyo a la evaluación de habilidades del controlador de tráfico aéreo. Ref. 2014/00093/001, Company: FerroNats Air Traffic Services S.A., 02/01/2014-01/01/2015. PI: Concepción Alicia Monje Micharet (UC3M). 11,852 Euros.

8. Adaptation of the 3D scenario of the aerodrome of alicante for Ferronats ATC requirements. Ref. 2013/00495/001, Company: FerroNats Air Traffic Services S.A.,



13/12/2013-02/04/2014. PI: Concepción Alicia Monje Micharet (UC3M). 23,100 Euros.

9. Acuerdo marco para la provisión de asistencia técnica a la Universidad Carlos III como proveedor de formación de navegación aérea. Ref. 2013/0002944-20AM13PA-CE, Company: Ommeron Aeronautica, S.L., UC3M, 17/09/2013-16/09/2015. PIs: Concepción Alicia Monje Micharet (UC3M), Carlos Balaguer Bernaldo de Quirós (UC3M). 1,000,000 Euros.

10. Cátedra Peugeot para fomento de la investigación en el área de ingeniería de sistemas y automática. Company: Peugeot-Citröen Automóviles España S.A., 2006-2014. PI: Miguel Ángel Salichs Sánchez-Caballero (UC3M). 50,000 Euros/year.

C.4. Patents

[1] C.A. Monje, C. Relaño, L.F. Nagua, S. Martínez, C. Balaguer, Eslabón para articulación blanda y articulación blanda que comprende dicho eslabón. Ref. P202030726, Spain, 5/07/2020 (under evaluation). Universidad Carlos III de Madrid.

C.5. Other merits

- **PhD Thesis with European Doctorate Distinction and Doctorate Extraordinary Award** (2006).
- International research stays: ENSEIRB Bordeaux (France, 6 months, 2003-2004), CSOIS Utah (EEUU, 3 months, 2005), DLR (Germany, 3 months, 2015), Biorobotic Institute of Pisa (Italy, 3 months, 2019-2020).
- **Invited speaker in international conferences** (TEDx talks, Biorobotics Institute, DLR, IEEE Control System Society, CSOIS, IFAC FDA, etc).
- **Scientific reviewer of international journal and conference papers and books** (ISA Transactions, IEEE Transactions on Education, IET Control Theory and Applications, Journal of Dynamic Systems, IROS, ICRA, CLAWAR, HUMANOIDS, ICAR, etc).
- **Organizing Committees** (IROS 2018, HUMANOIDS 2014, SAFC 2007, IFAC FDA 2004).
- **Scientific and Technical Program Committees** (CLAWAR 2017-2020, TC 2.5 on Robust Control 2012-2020, TC 4.3 on Robotics 2012-2020, Symposium on Fractional Signals and Systems 2017, IEEE ASME MESA 2007-2011, IEEE ICMA 2007, etc).
- **Workshops organizer in international conferences** (IROS 2018-2020, CLAWAR 2016, Robocity 2015-2016, etc).
- **Editorial Board in international journals** (Frontiers in Robotics and AI, IJMERR, Robotics, IJARS, IJHR).
- **Senior Editor in international conferences** (IROS 2018-2020, Humanoids 2014, CCDC 2008-actualidad).
- **Expert evaluator of the European Commission** for Horizon projects 2020 (2017-2020).
- **Member of the Advising Committee of the “Centro de Excelencia de Aeronaves Pilotadas por Control Remoto”** (AESA) (desde 2017).
- **Expert evaluator of the “Agencia de Certificación e Innovación Española (ACIE)”** (desde 2017).
- **Expert evaluator of the “Entidad de Certificación DNV GL”** (desde 2017).
- **Member of international networks/clusters** (EuRobotics, RoboSoft, Plataforma Tecnológica Española de Robótica - HispaRob).
- **More than 100 collaborations with relevant media** (TV, radio, press).
- **Scientific Advisor of the film “Automata”** by Antonio Banderas (2012).
- **Awards:** 1. “Gigante Extremeño” Award (2019); 2. “Ada Byron a la Mujer Tecnóloga de la Universidad de Deusto” Award (2019); 3. “Excelencia Investigadora de la Universidad Carlos III de Madrid” Award (2018); 4. “Mujer y Tecnología de la Fundación Orange” Award (2018); 5. “Mejor Científica Contemporánea – QUO-CSIC” Award (2017), 6. “Best Paper – Control Engineering Practice” Award (2008); 7. “Best Paper – International Journal of Humanoid Robotics” Award (2020); 8. Others.