Part A. PERSONAL INFORMATION

CV date	29/05/2022

First name	Juan Jesús		
Family name	García Domínguez		
Gender (*)	Male	Birth date (dd/mm/yyyy)	11/08/1970
Social Security, Passport, ID number	34.838.8321P		
e-mail	jjesus.garcia@uah.es	URL Web	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-7121-8651	

(*) Mandatory

A.1. Current position

Position	Full Professor
Initial date	29/12/2017
Institution	University of Alcalá
Department/Center	Electronics / School of Engineering
Country	Spain / Teleph. number 656456397
Key words	Ambient Intelligence, Healthy Ageing, Multisensory system, Micro pogrammable Electronic Systems

A.2. Previous positions (research activity interruptions, art. 14.2.b))

Period	Position/Institution/Country/Interruption cause
1996-2008	Lecturer / University of Alcalá /Spain
2008-2017	Associate Professor/ University of Alcalá /Spain
2017-	Full Professor/ University of Alcalá /Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD	Universidad de Alcalá	2006
Telecommunication Eng.	Universidad Politécnica de Valencia	1999
Tech. Telecomunicación Eng.	Universidad de Alcalá	1992

Part B. CV SUMMARY *(max. 5000 characters, including spaces)*

Google Scholar: 2401 cites, h-index=25, i10-index=55
RG Score: 31.78 (https://www.researchgate.net/profile/Juan-Garcia-122)

The researcher holds a degree in Telecommunications Engineering from the Polytechnic University of Valencia and a PhD in Telecommunications Engineering from the University of Alcalá, a European PhD and he was awarded best doctoral thesis in 2006. He currently occupies a position of Professor in the Department of Electronics of the University of Alcalá. During his research activity he has participated in **numerous research projects, with public funding (31 projects, 7 as Principal Investigator, total funding 2.436.000€) and private funding (47 projects, 14 as Principal Investigator, total funding 3.200.000€)**. The results

of the various research projects have been the subject of numerous publications in journals **(more than 50 international publications in indexed journals, more than a half in Q1)** (in relevant journals, as IEEE Proceedings, IEEE In. Trans. Systems, IEEE Trans. on Signal Proc., IEEE Trans. on Instrum. and Meas); national and **international conferences (more than 120 papers)** and **three patents** and **two under review**. His research topic covers the areas of multisensorial systems, biomedical signal processing, positioning systems and electronic and information technologies applied to transport. In recent years he started to carry out **research in ambient intelligence for independent living, applied to the evaluation of frailty in the elderly,** consolidating a research team around this topic, collaborating and establishing synergies with neurologists, geriatricians and physiotherapists. In connection with this research topic, he participates in the application of the COST Action AAL-TRUSTTECH (OC-2021-1-25284) and collaborates with the companies Intelligent Data (topic: wearables for health monitoring) and Informetis Europe Limited (topic: electricity consumption applied to independent living). He **promoted the construction** of the **Motion Capture Lab** of the University of Alcalá, with a funding of 180.000€, and is currently in charge of it.

He has also supervised **six doctoral theses** on the above-mentioned topics, **three of them awarded as best doctoral thesis at University of Alcalá,** and one of them **Joint PhD** with University College Cork**.** He has been the **director of research work of 13 scholarship or research contract holders**, and supervisor of more than 50 undergraduate students. **Currently he supervises four doctoral theses**. **Former PhD and supervised students** are currently working in academic and research institutions (University Rey Juan Carlos, University of Alcalá, German Aeroespace Center (DLR)), and in relevant private companies (INDRA, AIRBUS, TTTech Auto Iberia, etc.). He has participated in numerous thesis panels (Spain, Portugal, Finland).

He has been **a member of the Organizing Committee** of different conferences: 7th Indoor Positioning Indoor Navigation (IPIN2016), 5th IEEE International Symposium on Intelligent Signal Processing (WISP'07), TELEC04, SAAEI02; and he is TPC member of the conferences IPIN, IEEE MeMea, EDUCON, etc. He is a regular reviewer of IEEE TIM, IEEE ITS, etc.

He **was awarded** the "Salvador de Madariaga" **Visiting Research Fellowship** in University College Cork (Cork, Ireland), for 2014 (funded by the Spanish Ministry of Education, Culture and Sport); **1st Prize** of the 11th **Ideas Competition for the creation of Technology-Based Companies-UAH**, €3000 (2019) with the company proposal "FragilTec Assistance System" ;and **UAH Social Council Award for the Transfer of Knowledge University-Society** for the work "Ambient intelligence for independent living", 18000€ (2019). He continuously collaborates in **dissemination activities to society**, such as Science Week, the Researchers' Night or "Pint of Science". The result of all this research and knowledge transfer activity is the **recognition of four periods of research activity** (1994-1999, 2000-2004, 2005-2010 and 2011-2016) and **a period of knowledge transfer and innovation** in 2020.

In addition to scientific activity, he has held the following **positions of university management and coordination**: Secretary of the Department of Electronics of the University of Alcalá (1999-2001); **Director of the Department of Electronics** (2010-2013); **Coordinator of the Doctorate Program** "Advanced Electronic Systems. Intelligent Systems" (2010-2013); **Co-director of the University Master** in Advanced Electronic Systems Intelligent Systems and of the Official Master in Automation of Industrial Processes (2010-2013). Currently he is **member of Support Team of the Centre for Teaching and Innovation and Online Studies** (IDEO), appointed by the President of University of Alcalá in 2019.

Thanks to his research and academic activity, he has been selected for being **member of research and evaluation panels** (University of Alcalá, University Carlos III, University College Cork), for selecting researchers and academics.

Part C. RELEVANT MERITS *(sorted by typology)*
C.1. Publications *(see instructions)*

1 Scientific paper. Sara García-de-Villa, Ana Jiménez-Martín, Juan Jesús García-Domínguez. 2022. A database of physical therapy exercises with variability of execution collected by wearable sensors. Scientific Data. Springer Nature. ISSN 2052-4463. Accepted (Sent to Production).

2 Scientific paper. Sara García-de-Villa, David Casillas-Pérez, Ana Jiménez-Martín, Juan Jesús García-Domínguez. 2022. Simultaneous exercise recognition and evaluation in

prescribed routines: Approach to virtual coaches. Expert Systems With Applications. Elsevier. pp.1-15. https://doi.org/10.1016/j.eswa.2022.116990

3 Scientific paper. José Manuel Villadangos Carrizo; Jesús Ureña Ureña; Juan Jesús García Domínguez; Ana Jiménez Martín; Álvaro Hernández Alonso; María Carmen Pérez Rubio. 2021. Dynamic Adjustment of Weighted GCC-PHAT for Position Estimation in an Ultrasonic Local Positioning System Sensors. MDPI. 21, pp.1-25. https://doi.org/10.3390/s21217051.

4 Scientific paper. Sara García de Villa; Ana Jiménez Martín; Juan Jesús García Domínguez. 2021. Novel IMU-Based Adaptive Estimator of the Center of Rotation of Joints for Movement Analysis IEEE TRANSACTIONS ON INSTRUMENTATION AND MEASUREMENT. IEEE. 70, pp.1-11. 10.1109/TIM.2021.3073688

5 Scientific paper. David Gualda Gómez; María Carmen Pérez Rubio; Jesús Ureña Ureña; Sergio Pérez Bachiller; José Manuel Villadangos Carrizo; Álvaro Hernández Alonso; Juan Jesús García Domínguez; Ana Jiménez Martín. 2021. LOCATE-US: Indoor Positioning for Mobile Devices Using Encoded Ultrasonic Signals, Inertial Sensors and Graph-Matching Motion Constraints Sensors. MDPI. 21, pp.1-25. https://doi.org/10.3390/s21061950.

6 Scientific paper. Dina Bousdar Ahmed; Estefania Munoz Diaz; Juan Jesús García Domínguez. 2020. Novel Multi-IMU Tight Coupling Pedestrian Localization Exploiting Biomechanical Motion Constraints. Sensors. MDPI. 20, pp.1-22. https://doi.org/10.3390/s20185364

7 Scientific paper. Dina Bousdar Ahmed; Estefania Munoz Diaz; Juan Jesús García Domínguez. 2020. Automatic Calibration of the Step Length Model of a Pocket INS by Means of a Foot Inertial Sensor Sensors. MDPI. 20, pp.1-18. https://doi.org/10.3390/s20072083

8 Scientific paper. Dina Bousdar Ahmed; Luis Enrique Díez; Estefania Munoz Diaz; Juan Jesús García Domínguez. 2020. A Survey on Test and Evaluation Methodologies of Pedestrian Localization Systems IEEE Sensors Journal. IEEE. 20-1, pp.479-491. https://doi.org/10.1109/JSEN.2019.2939592

9 Scientific paper. Antonio Ruano; Alvaro Hernandez Alonso; Jesus Ureña Ureña; Maria Ruano; Juan Jesus Garcia Dominguez. 2019. NILM Techniques for Intelligent Home Energy Management and Ambient Assisted Living: A Review Energies. MDPI. 12-2203, pp.1-29. https://doi.org/10.3390/en12112203

10 Scientific paper. Jesús Ureña Ureña; Álvaro Hernández Alonso; Juan Jesús García Domínguez; José Manuel Villadangos Carrizo; Mª del Carmen Pérez Rubio; David Gualda Gómez; Fernando Javier Álvarez Franco; Teodoro Aguilera Benítez. 2018. Acoustic Local Positioning with Encoded Emission Beacons Proceedings of the IEEE. IEEE. 106-6, pp.1042-1062. 10.1109/JPROC.2018.2819938

C.2. Congress

1 Oral. Ana Jiménez; Ismael Miranda; David Gualda; Sara García; Sergio Lluva; J. Jesús García. June 2021. BLE-based approach for detecting daily routine changes Proceedings of the 16th IEEE International Symposium on Medical Measurements and Applications.

2 Oral Sara García; Andrea Parra; Ana Jiménez; J. Jesús García; David Casillas. June 2021. ML algorithms for the assessment of prescribed physical exercises Proceedings of the 16th IEEE International Symposium on Medical Measurements and Applications.

3 Oral. Sergio Lluva Plaza; José M. Villadangos Carrizo; Juan Jesús García Domínguez; Ana Jiménez Martín; David Gualda Gómez. November 2020. FrailWear: A Wearable IoT Device for Daily Activity Monitoring of Elderly Patients Proceedings of 2020 XXXV Conference on Design of Circuits and Integrated Systems (DCIS). IEEE. pp.1-6.

4 Oral. Sara García de Villa; Ana Jiménez Martín; J. Jesús García Domínguez. June 2020. Adaptive IMU-based Calibration of the Center of Joints for Movement Analysis: One Case Study Proceedings of 15th edition of IEEE International Symposium on Medical Measurements and Applications 2020. IEEE. ISBN 978-1-7281-5386-5.

C.3. Projects or research lines

1 Project. Sistema multisensorial para la alerta temprana de deterioro físico y cognitivo en la población vulnerable (FrailAlert). SBPLY/21/180501/000216. Junta de Comunidades de Castilla - La Mancha. Juan Jesús García Domínguez. (Universidad de Alcalá). 2022-2024. 119.388,50 € Principal investigator.

2 Project. Sistema de evaluación de cambios de comportamiento para la detección temprana de trastornos cognitivos en entornos rurales mediante técnicas NILM y wearables Proyecto Jóvenes Investigadores de la Comunidad de Madrid. CM/JIN/2021-016. Mª Carmen Pérez Rubio (Universidad de Alcalá). 01/01/2022-31/12/2023. 42.750 €

3 Project. Actividad Física post COVID 19. Estudio Longitudinal. Colegio Profesional de Fisioterapeutas de la Comunidad de Madrid. Mª José Yuste Sánchez. (Universidad de Alcalá). 01/01/2021-31/12/2021. 15.000 €

4 Project. RTI2018-095168-B-C51, SISTEMAS DE POSICIONAMIENTO LOCAL: ENFOQUE HOLISTICO DESDE LAS TECNOLOGIAS BASE HASTA LAS APLICACIONES. Ministerio de Ciencia, Innovación y Univesidades. Jesús Ureña Ureña. (Universidad de Alcalá). 01/01/2019-31/12/2021. 127.171 € Principal investigator.

5 Project. Diseño y desarrollo de un sistema de detección y análisis de la actividad física y pautas de comportamiento para ayuda al diagnóstico de la fragilidad (FrailCheck). Junta de Comunidades de Castilla - La Mancha. Juan Jesús García Domínguez. (Universidad de Alcalá). 01/09/2018-31/08/2020. 125.630 € Principal investigator.

6 Project. Aplicación de técnicas NILM y redes neuronales al reconocimiento de actividades/rutinas diarias de personas aprovechando las redes inteligentes de energía (2ª Accésit CEI-2018). (Universidad de Alcalá). 07/11/2018-31/12/2019. 4.000 €

7 Project. TIN2015-71564-C4-1-R, Mejora y robustecimiento de sistemas de localización en interiores para aplicaciones en robótica y asistencia a personas. MINISTERIO DE ECONOMIA Y COMPETITIVIDAD. Juan Jesús García Domínguez. 01/01/2016-31/12/2018. 106.359 € Principal investigator.

8 Project. Sistema electrónico para el análisis de la actividad de la población anciana como soporte a la valoración de la fragilidad (LocActiv). David Gualda Gómez. (Universidad de Alcalá). 01/12/2017-30/11/2018. 3.000 €

9 Project. TIN2012-38080-C04-01, Sistemas Cooperativos de Localización para Personas y Robots Móviles en Entornos Diversos. MINISTERIO DE ECONOMIA Y COMPETITIVIDAD. Jesús Ureña Ureña. 01/01/2013-31/01/2016. 98.935,2 €

10 Project. CCG2013/EXP-095, Monitorización de personas en ambientes inteligentes para gestión de confort y salud (AmbiCon). Universidad de Alcalá. Juan Jesús García Domínguez. 02/12/2013-01/12/2014. 3.000 € Principal investigator.

C.4. Participation in technology/knowledge transfer activities and exploitation of results.

1 Contract. Track circuit monitoring system, Financiado por Enyse S.A.U. Ref UAH 59/2021. Participantes: Universidad de Alcalá, Desde 10-05-2021 hasta 10-11-2023. Financiación 453.750 € Colaborador.

2 Contract. Sistema de Detección Simultánea de Discontinuidad Eléctrica de Raíles en Líneas de Doble Vía -SD3 INABENSA, S.A., F. Espinosa Zapata. 22/10/2012-22/04/2014. 370.260 €

3 Patent. Inventors: Felipe Espinosa, Manuel Mazo, Jesús Ureña, José Antonio Jiménez, Álvaro Hernández, Mª Carmen Pérez, Ignacio Fernández, Juan Carlos García, J. Jesús García, Juan Carlos Cortés, Raúl Arévalo. Title: System and method for detecting broken rails on a railway line. Reference 15842134.7 – 1810 PCT/ES2015/070656 Priority: ES 15.09.14 / ESA 201431338 Date of filing: 09/09/2015.
Applicant/Proprietor: Instalaciones Inabensa, SA.

4. Patent. Inventors: D. Gualda, J. Ureña, A. Hernández, J. M. Villadangos, J. J García, A. Jiménez, M. C. Pérez. Title: Empleo de suma de tonos ultrasónicos a diferentes frecuencias para la estimación de la posición de dispositivos móviles, N. de solicitud: P202130032, País de prioridad: España, Fecha de prioridad: 21/01/2021, Entidad titular: Universidad de Alcalá Países a los que se ha extendido: España.

5. Patent. Inventors: J. Ureña, A. Hernández, E. Aparicio, J. M. Villadangos, J. J García, A. Jiménez, M. C. Pérez. Title: Sistema y procedimiento de posicionamiento de alta velocidad con emisores móviles tipo leds y receptores estáticos tipo fotodiodos en cuadrantes. N. de solicitud: P202131028, País de prioridad: España, Fecha de prioridad: 02/11/2021, Entidad titular: Universidad de Alcalá, Países a los que se ha extendido: España.