



Part A. PERSONAL INFORMATION

First name	Jesús		
Family name	Ureña Ureña		
Gender (*)	██████	Birth date (dd/mm/yyyy)	██████
Social Security, Passport, ID number	████████████████████		
e-mail	████████████████████	URL Web: www.uah.es	
Open Researcher and Contributor ID (ORCID) (*)	0000-0003-1408-6039		

(*) *Mandatory*

A.1. Current position

Position	Full Professor		
Initial date	20/10/2010		
Institution	University of Alcalá		
Department/Center	Electronics	School of Engineering	
Country	Spain	Teleph. number	██████████
Key words	Mobile Robots, Sensory Systems, Local positioning, Electronic Control, Smart Spaces, Independent Living.		

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

Period	Position/Institution/Country/Interruption cause
1986-1998	Lecturer / University of Alcalá /Spain
1998-2110	Associate Professor/ University of Alcalá /Spain
2010-	Full Professor/ University of Alcalá /Spain

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Doctorado (PhD) Ing. de Telecomun.	Universidad de Alcalá	1998
Ingeniero de Telecomunicación	Universidad Politécnica de Madrid (UPM)	1992
Ing. Técnico de Telecomunicación	Centro Enseñanzas Integradas (UPM)	1986

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

Google Scholar: 4766 cites (**1983 last 5 years**), h-index=35 (**20**), i10-index=121 (**58**).

RG Score: 1.644 -higher than 95% (<https://www.researchgate.net/profile/Jesus-Urena/stats>)

J. Ureña holds a Degree in Telecommunications Eng. from the Polytechnic University of Madrid and PhD in Telecommunications Eng. from the University of Alcalá, where currently holds a position of **Full Professor** in the Dep. of Electronics. He has been **Director and Secretary of the Electronics Dep.** of the Univ. of Alcalá. From 1999 **he is leading the GEINTRA-USRF research group** in the Dep. of Electronics, Univ. of Alcalá, with 7 permanent researchers and **an average of more than 15 scholarships**, contracts and PhD students. He has participated in numerous **research projects, 35 with public funding, total funding 2.700.000 €** (13 as Principal Investigator) **and more than 30 with private funding, total funding of about 2.000.000€** (more than half as responsible).

The topics addressed in research covers the areas of mobile robotics, multisensor integration, ultrasound and infrared sensors, implementation of algorithms in hardware, positioning systems, ambient assisted living and electronic and information technologies applied to transport. As results of the research projects there **are publications in journals (more than 80 international publications in indexed journals)** and participations in national and international conferences (more than 150 papers). These papers are published in different journals - going through reviews of very varied committees - many of them of **the best in their respective categories** and resulting in **high citation rates**. Most publications are in journals that are **highly valued in applied engineering**: e.g. IEEE Proceedings, IEEE Trans. on Robotics, IEEE Trans. on Signal Proc., IEEE Trans. on Instrum. and Meas., IEEE Robotics

and Autom. Magazine, ... Many of the developed works have given rise to practical electronic systems being object of industrial exploitation (**co-inventor in 11 patents**). The recognition of this activity by the Spanish Nat. Comm. for the Evaluation of Research Activity ends up in the positive evaluation of **five consecutive 6-year-periods of research** (1993-1998, 1999-2001, 2002-2009, 2010-2015, 2016-2021) and **one of transference** (2020). He applied for funding to **start the Motion Capture Lab** of the University of Alcalá, obtaining a funding of 180.000€. He participated in 2016, as an **expert of the Ministry, in the Tech. Project Comm. of the National R&D Plan** in the area of Comp. Sc. Techn. (TIN).

He has supervised **more than 100 final students' works** in Grades and Masters. He has **supervised or co-supervised up to 20 doctoral theses**, within a doctoral program with a Quality Mention since 2003, **10 of the thesis with International doctorate recognition and 4 in international co-supervision** (double degree with Univ. Blaise-Pascal [Fr], with Xi'an Technology University [Ch], with Univ. de Tounis El Manar [Tu] and Univ. de La Plata [Ar]. Ten **(10) of the thesis obtained the award for best thesis** in the University of Alcalá. Most of the **former students are involved in research activities** at universities (4 in LatAm, 1 in Asia and 10 in Spain, three of them currently as Full Professors). **Awarded by the UAH for the excellence in PhD Supervision 2023**.

He **stayed several months in European and Latin-American Centers**: LASMEA at Blaise Pascal Univ. (Fr), Intell. Syst. Centre at Algarve Univ. (Po). He has collaborated with numerous national groups as **coordinator of projects and promotor of the Indoor Positioning and Navigation Network** (REPIN++) with thirteen Spanish group. He has been **General chair** in the 5th IEEE Int. Symp. on Intell. Signal Processing - WISP'07, 3rd Workshop on Biomimetic Ultrasound, and in the 7th Int. Conf. on Indoor Positioning and Indoor Navigation (IPIN), held in Alcalá de Henares in 2016. **Member of the IPIN Steering Committee and TPCs** in national and international conferences (I2MTC, VICIMS, ETFA, WISP, ROSE, IPIN, ...). He was **outstanding editor** (2014-2020) and **currently is Senior Area Editor** of the journal "IEEE Trans. on Instrum. and Meas.", and **Associate Editor** of J-ISPIN. **President of the Spanish chapter** of the IEEE Instrum. and Meas. Society.

With his research group, **he was awarded 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 or industry demonstrations. Thanks to his research and academic activity, he has been selected for being **member of research and evaluation panels** in different **national** (UAH, UC3M, EHU, U. Extremadura, UJI, ...) and **international universities** (Tampere U., KU Leuven, Univ. of Singapur, RMIT University, ...) for selecting researchers and academics.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions: shorted to 10)

1 Scientific paper David Moltó, Elena Aparicio-Esteve, Álvaro Hernández, Jesús Ureña "Architecture for implementing an infrared local positioning system". *Measurement*, Volume 250, 2025, 117116, <https://doi.org/10.1016/j.measurement.2025.117116>

JCR **Q1**, Impact Factor: 5,6. Position: 9 out of 79 in Instruments & Instrumentation.

2 Scientific paper Elena Aparicio-Esteve, Jesús Ureña, Álvaro Hernández, David Moltó, "A Dataset for Assessing and Optimizing Quadrant Photodiode-based Visible Light Positioning Systems". *Scientific Data*, Vol. 12, 614 (2025). <https://doi.org/10.1038/s41597-025-04929-6>

JCR **Q1**, Índice de impacto: 5,8. Puesto: 16 de 134 en la categoría Multidisciplinary Sciences.

3 Scientific paper Dian Tian; Ningmei Yu; Minghui Xie; Jiahao Tang; Zhuang Feng; Álvaro Hernández; Jesús Ureña. "A Low-Latency Power Series Approximate Computing and Architecture for Co-Calculation of Division and Square Root". *IEEE Transactions on Circuits and Systems I: Regular Papers*, Online Páginas, inicial: 1 final: 12 Fecha: **2024**. <https://doi.org/10.1109/TCSI.2024.3368102>

JCR **Q1**, Impact Factor: 5,200. Position: 61 out of 352 in Electrical and Electronic Engineering.

4 Scientific paper E. Aparicio-Esteve, J. Ureña, A. Hernández, J. M. Villadangos. "Combined Infrared-Ultrasonic Positioning System to Improve the Data Availability. *IEEE Sensors Journal*. Volume: 23(20) Pp: 25152 - 25164 Date: **2023**. <https://doi.org/10.1109/JSEN.2023.3301219>

JCR **Q1**, Impact Factor: 4,300. Position: 15 out of 63 in Instruments & Instrumentation.

5 Scientific paper. E. Aparicio-Esteve, W. Raes, N. Stevens, J. Ureña and Á. Hernández, "Experimental Evaluation of a Machine Learning-Based RSS Localization Method Using Gaussian Processes and a Quadrant Photodiode," in *Journal of Lightwave Technology*, vol. 40, no. 19, pp. 6388-6396, 1 Oct.1, **2022**, doi: <https://doi.org/10.1109/JLT.2022.3198009>.

JCR **Q1**, Impact Factor: 4,4394. Position: 24 de 102 in Optics.

6 Scientific paper. Elena Aparicio-Esteve, Álvaro Hernández, Jesús Ureña. "Design, Calibration and Evaluation of a long-range 3D Infrared Positioning System based on Encoding Techniques. *IEEE Trans. on Instrumentation and Measurements*, vol. 70, pp. 1-13, **2021**. <https://doi.org/10.1109/TIM.2021.3089223>

JCR **Q1**, Impact Factor: 4,016. Position: 11 out of 64 in Instruments & Instrumentation.

7 Scientific paper. Elena Aparicio-Esteve, Álvaro Hernández, Jesús Ureña, José M. Villadangos. "Visible Light Positioning System based on a Quadrant Photodiode and Encoding Techniques". *IEEE Transactions on Instrumentation and Measurement*, vol. 69, no. 8, pp. 5589-5603, Aug. **2020**, <https://doi.org/10.1109/TIM.2019.2962563>.

JCR **Q1**, Impact Factor: 3,655. Position: 9 out of 64 in Instruments & Instrumentation.

8 Scientific paper. Jesus Ureña, Álvaro Hernández, Juan Jesús García, José Manuel Villadangos, M. del Carmen Pérez, David Gualda, Fernando Álvarez, Teodoro Aguilera. "Acoustic Local Positioning with Encoded Emission Beacons". *Proceedings of IEEE*, Vol. 106(6), Pages: 1042-1062, June **2018**. <https://doi.org/10.1109/JPROC.2018.2819938>.

JCR **Q1**, Impact Factor: 10,694. Position: 5 out of 266 in Engineering, Electrical & Electronics.

JCR **Q1**: Impact Factor 3,541. Position 14/105 in "Comp. Sc., Interdisciplinary Applications")

9 Scientific paper. David Gualda, Jesús Ureña, Juan C. García, Enrique García, José Alcalá. "Simultaneous calibration and navigation (SCAN) of multiple ultrasonic local positioning systems". *Information Fusion*, 45 (**2018**). <https://doi.org/10.1016/j.inffus.2018.01.005>.

JCR **Q1**: Impact Factor: 13,669. Position 1 out of 108 in Comp. Science, Theory & Methods.

10 Scientific paper. José Alcalá, Jesús Ureña, Álvaro Hernández, David Gualda. "Sustainable Homecare Monitoring System by Sensing Electricity Data". *IEEE Sensors Journal*, Vol. 17(23), 7741-7749, Dec. **2017**. <https://doi.org/10.1109/JSEN.2017.2713645>.

JCR **Q1**, Impact Factor: 2,617. Position 14 out of 61 in Instruments & Instrumentation

C.2. Conferences

1 Book chapter (proceedings): D. Moltó, E. Aparicio-Esteve, Á. Hernández, T. Feigl, C. Mutschler and J. Ureña, "Definition of a Neural Network for an IR Positioning System based on Energy Measurements," 2025 International Conference on Indoor Positioning and Indoor Navigation (IPIN), Tampere, Finland, 2025, pp. 1-6, doi: 10.1109/IPIN66788.2025.11213161.

2 Book chapter (proceedings): G. García-Gutiérrez, E. Aparicio-Esteve, J. Ureña, J. M. Villadangos, A. Jiménez-Martín and J. J. García-Domínguez, "UWB and mmWave-Radar Indoor Localization System to Support Elderly Routine Analysis," 2025 International Conference on Indoor Positioning and Indoor Navigation (IPIN), Tampere, Finland, 2025, pp. 1-6, doi: 10.1109/IPIN66788.2025.11212984.

3 Book chapter (proceedings): J. Ureña, J. M. Villadangos, Á. Hernández, D. Moltó, E. Aparicio and J. C. García, "Conditioning Stage of a QADA Receiver for a Large Range IR Positioning System" 2024 IEEE Int. Instrum. and Measurement Techn. Conf. (I2MTC), Glasgow, United Kingdom, 2024, pp. 1-6, doi: 10.1109/I2MTC60896.2024.10561150.

4 Book chapter (proceedings): E. Aparicio-Esteve, J. Ureña, Á. Hernández, D. Moltó, J. M. Villadangos and M. Cubero, "Centralized Optical 3D Positioning System for Emitting Tags," 2023 13th International Conference on Indoor Positioning and Indoor Navigation (IPIN), Nuremberg, Germany, 2023, pp. 1-6, doi: 10.1109/IPIN57070.2023.10332473.

5 Book chapter (proceedings): D. Moltó, M. Cubero, E. Aparicio-Esteve, Á. Hernández, J. M. Villadangos and J. Ureña, "Definition of a SoC Architecture for a High-Rate Correlator Bank," 2023 38th Conference on Design of Circuits and Integrated Systems (DCIS), Málaga, Spain, 2023, pp. 1-6, doi: 10.1109/DCIS58620.2023.10335998.

6 Book chapter (proceedings): E. Aparicio-Esteve, Á. Hernández and J. Ureña, "Evaluation of MAI Effect in Encoding Techniques for an Infrared Positioning System," 2020 IEEE International Instrumentation and Measurement Technology Conference (I2MTC), Dubrovnik, Croatia, 2020, pp. 1-6, doi: 10.1109/I2MTC43012.2020.9129205.

7 Book chapter (proceedings): J. C. Barbero, A. Hernández and J. Ureña, "FPGA-based Architecture for Identification Algorithms in NILM Techniques," 2020 IEEE International Instrumentation and Measurement Technology Conference (I2MTC), Dubrovnik, Croatia, 2020, pp. 1-5, doi: 10.1109/I2MTC43012.2020.9128538.

C.3. Research projects

1 Project. PID2021-122642OB-C41, "Localización y detección para seguimiento de movimiento y actividad de personas (INDRI)". Ministerio de Ciencia e Innovación. Jesús Ureña, IP. (Univ. de Alcalá). 01/09/2022-31/08/2025. 166.617 €.

2 Project. CM/DEMG/2024- 007, "Sistema de Posicionamiento Óptico Centralizado para Trazado del Movimiento (OPTIMAC)". Comunidad de Madrid. Elena Aparicio IP, Jesús Ureña, Research team (Universidad de Alcalá). 01/01/2025-31/12/2026. 45.800 €.

3 Project. SBPLY/21/180501/000216. Sistema multisensorial para la alerta temprana de deterioro físico y cognitivo en la población vulnerable (FrailAlert). Junta de Comunidades de Castilla - La Mancha. Juan Jesús García / Ana Jiménez, IPs, Jesús Ureña, Research team. (Universidad de Alcalá). 01/09/2022-31/08/2025. 119.388 €.

4 Project. RTI2018-095168-B-C51, "Local Positioning Systems: Holistic approach from base technologies to the applications (MICROCEBUS)". Ministerio de Ciencia, Innovación y Universidades. Jesús Ureña, IP. (Univ. de Alcalá). 01/01/2019-31/12/2021. 127.171 €.

5 Project. TIN2015-71564-C4-1-R, Mejora y robustecimiento de sistemas de localización en interiores para aplicaciones en robótica y asistencia a personas (TARSIOUS). MINISTERIO DE ECONOMIA Y COMPETITIVIDAD. Jesús Ureña, IP. 01/01/2016-31/12/2018. 106.359 €.

6 Project. RED2022-134355-T, "Red de Posicionamiento y Navegación en Interiores y Exteriores Restringidos y sus Aplicaciones (REPNN++)". Ministerio de Ciencia e Innovación, Jesús Ureña, IP. U..of Alcalá, U. Polit. Madrid, U. of Extremadura, U. of Vigo, U. of Deusto, U. Jaume I, U. of Granada, U. Oberta de Catalunya. 01/06/2023 to: 31/07/2025. 14.500 €.

7 Project. TED2021-131773B-I00, "Digitalización de los cuidados en el hogar mediante el reconocimiento y monitorización no intrusivos de actividades de personas a partir del consumo eléctrico global (ALONE)", Álvaro Hernández IP, Jesús Ureña Research team (Universidad de Alcalá). 01/12/2022-30/11/2024. 111.320 €.

8 Project. TED2021-130867B-I00, "Seguimiento digital de los adultos mayores para la detección precoz del deterioro físico y cognitivo (ActiTracker)", Juan J. García / Ana Jiménez, IPs, Jesús Ureña, Research team (Univers. de Alcalá). 01/12/2022-30/11/2024. 128.570 €.

9 Project. SBPLY/17/180501/000392. "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)". J. C. de Castilla - La Mancha. Juan Jesús García / Ana Jiménez, IPs, Jesús Ureña, Research team. (Universidad de Alcalá). 01/09/2018-31/08/2020. 125.630 €.

10 Project. TIN2012-38080-C04-01, Sistemas Cooperativos de Localización para Personas y Robots Móviles en Entornos Diversos (LORIS). Ministerio de Economía y Competitividad. Jesús Ureña, PI. 01/01/2013-31/01/2016. 98.935,2 €.

C.4. Contracts, technological or transfer merits

1 Contract. Track circuit monitoring system, Financiado por Enyse S.A.U. Ref UAH 59/2021. Participantes: Univ. Alcalá, (10-05-2021 to 10-11-2023). Financiación 453.750 €. Colaborador.

2 Patent. Inventors: Felipe Espinosa, Manuel Mazo, Jesús Ureña, José Antonio Jiménez, Álvaro Hernández, M^a 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.

3 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". Application No: P202130032.

Country of priority: Spain. Priority date: 21/1/2021. Entity: University of Alcalá.

4 Patent. Inventors: J. Ureña, A. Hernández, E. Aparicio, J. M. Villadangos, J. J García, A. Jiménez, M. C. Pérez. Title: High-speed positioning system and procedure with moving LED-type emitters and static quadrant photodiode-type receivers. Application No: P202131028 Country of priority: Spain. Priority date: 2/11/2021. Entity: University of Alcalá.