





ABBREVED CURRICULUM VITAE (CVA) – <u>maximum 4 PAGES</u> Instructions to fill this document are available in the website

Part A. PERSONAL INFORMATION		CV date		7/05/2021
First and Family name	Pedro José Sanz Valero			
Social Security, Passport, ID number	22531348L		Age	61
Researcher codes	Open Researcher and Contributor ID (ORCID**)		0000-0003-3382- 1553	
	SCOPUS Author ID (*)			
	/oS Researcher ID (*)		K-5639-2016	

A.1. Current position

Name of University/Institution	Universitat Jaume I				
Department	Ingeniería y Ciencia de los Computadores (ICC)				
Address and Country	Avd Sos Baynat s/n; 12071 Castellón; SPAIN				
Phone number	964 728285	E-mail	sanzp@uji.es		
Current position	Catedrático de Universidad		From	22/11/2012	
Key words	Artificial Intelligence; Robotics				

A.2. Education

PhD, Licensed, Graduate	University	Year
Bachelor of Physical Sciences	Universitat de València (UV)	1985
M.Sc. in Eng. (CAD/CAM)	Technical University of Valencia (UPV)	1991
PhD of Computer Engineering	Universitat Jaume I (UJI)	1996

A.4. General Indicators of quality of scientific production (see instructions)

- Number of six-year research periods (last six-year period 6/6/18): FOUR
- Number of supervised PhD theses: FIVE (last ten years)
- Impact of scientific dissemination (Nov 2020)
 - Google Scholar

Total citations (since 2015) = 1767; Average citations / year for the last 5 years = 292; H-index (since 2015) = 22

ISI Web of Knowledge / JCR Science Edition

Relevant publications in the last ten years (Q1 or Q2) = 16. Among them, the publication *IEEE/ASME Transactions on Mechatronics*, 2015, 20(5), with 80 citations in GScholar / 50 in WofS, stands out.

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

Pedro J. Sanz is Full Professor in the Computer Science and Engineering Department at Universitat Jaume I (UJI, Spain). Sanz was a 1996 recipient of the "Best Thesis in Electronics and Computer Science Domains", National Research Prize, from the "Artigas Spanish Foundation" (UPM, Madrid, Spain).

Sanz is head of Interaction and Robotic Systems research group (IRS-Lab) that has been classified as a HIGH PERFORMANCE GROUP (UJI 011, 2017), and a GROUP OF EXCELLENCE by the GVA (PROMETEO / 2016/066) during the last four years (2016-2019).

In the last ten years, Sanz has been Coordinator of a European project (TRIDENT, FP7-ICT-248497, 2010-13) and four Spanish ones (DPI2008-06548-C03; DPI2011-27977-C03; DPI2014-57746-C3, DPI2017-86372-C3), all of them, in the context of underwater robotics. It is worth to mention that TRIDENT project got a score of excellent during the final evaluation by European Commission. Currently, it has been started a new European project, under H2020 program ("El-Peacetolero", 2020-2024) where Sanz is participating, and a contract has been signature, with the Spanish Ministry of Defense ("SIMBAAD", 2020-2022), Coordinated by him, including a consortium of four partners.



He is author or co-author of a broad range of research publications and is an active member of different scientific societies such as IEEE (RAS, SMC, and OES), EUCog and euRobotics.

Sanz has been appointed as Visiting Scientist at different well-known international research centers, like TUM (GERMANY, 2016 and 2002), University of Bologna (ITALY, 2008), and University of Blaise Pascal (FRANCE, 2002).

He was a Member of the Advisory Committee of the IEEE Systems Council (2008-12), representing the interests of IEEE RAS. Chair of several Tutorials and Workshops within outstanding Int. Conf. on Robotics, such as "2014 IEEE-RAS Int. Conf. on Humanoid Robots" (Madrid, 2014) where he was the Humanoids Competition Chair. Sanz has served as Associate Editor of some outstanding Journals (e.g. IEEE RAM, and IEEE SMC Part C), and currently he serves as Guest Editor of the Sensors Journal (JCR, Q1), through an active Special Issue (section "Sensor Networks").

Sanz is actively participating in some international networks such as EUCog (European Network for the Advancement of Artificial Cognitive Systems, Interaction and Robotics), being an official representative member of the UJI in euRobotics, and the SPARC society (i.e. public private partnership), created within the framework of the Horizon2020 program of EC, where he participates in the working group dedicated to Marine Robotics and in the Giralt Award Evaluation Panel that selects the best doctoral thesis in European robotics each year (since 2017 and continues).

He has been the Coordinator of the Spanish Robotics Network (CEA-IFAC, 2012-16), and currently is Vice-Chair of the IEEE RAS Spanish Chapter.

His research interests center on the grasping and manipulation skills for any kind of artificial systems, especially on mobile manipulators. In order to succeed with uncertainty in unstructured domains, different perceptual capabilities are explored and some Artificial Intelligence approaches are investigating, including learning from experience and following a knowledge-based methodology. In particular, the main topics related with this research are: Multisensory based Grasping and Dexterous Manipulation, Human-Robot Interaction, and Wireless Communication, all of them applied to any kind of real scenarios.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (see instructions)

- Pérez, J., Bryson, M., Williams, S. B., & Sanz, P. J. (2020). "Recovering Depth from Still Images for Underwater Dehazing Using Deep Learning". Sensors 20 (16), 4580. Q1. <u>https://doi.org/10.3390/s20164580</u>
- D. Centelles, A. Soriano, J. V. Martí and P. J. Sanz. (2020). "Underwater Multirobot Cooperative Intervention MAC Protocol", in *IEEE Access*, vol. 8, pp. 60867-60876. Q1. <u>https://doi.org/10.1109/ACCESS.2020.2983641</u>
- Veiga Almagro, C., Di Castro, M., Lunghi, G., Marín Prades, R., Sanz Valero, P. J., Pérez, M. F., & Masi, A. (2019). "Monocular Robust Depth Estimation Vision System for Robotic Tasks Interventions in Metallic Targets". *Sensors*, 19(14), 3220; Q1. https://doi.org/10.3390/s19143220
- G. Lunghi, R. Marin, M. Di Castro, A. Masi and P. J. Sanz. (2019). "Multimodal Human-Robot Interface for Accessible Remote Robotic Interventions in Hazardous Environments," in *IEEE Access*, vol. 7, pp. 127290-127319. Q1. <u>https://doi.org/10.1109/ACCESS.2019.2939493</u>
- JC Garcia; B Patrao; L Almeida; J Perez; P Menezes; J Dias; PJ Sanz. (2017). "A Natural Interface for Remote Operation of Underwater Robots" in *IEEE Computer Graphics and Applications*, vol. 37, no. 01, pp. 34-43. Q2. <u>https://doi.ieeecomputersociety.org/10.1109/MCG.2015.118</u>
- Palomeras, N.; Peñalver, A.; Massot-Campos, M.; Negre, P.L.; Fernández, J.J.; Ridao, P.; Sanz, P.J.; Oliver-Codina, G. (2016). "I-AUV Docking and Panel Intervention at Sea". *Sensors*, 16(10), 1673. Q1. <u>https://doi.org/10.3390/s16101673</u>
- D. Ribas, Ridao, P., Turetta, A., Melchiorri, C., Palli, G., Fernádez, J., and Sanz, P. J. (2015). "I-AUV Mechatronics Integration for the TRIDENT FP7 Project", in *IEEE/ASME Transactions on Mechatronics*, vol. 20, no. 5, pp. 2583-2592. Q1. <u>https://doi.org/10.1109/TMECH.2015.2395413</u>
- A. Peñalver, Pérez, J., Fernández, J. Javier, Sales, J., Sanz, P. J., et al. (2015), "Visually-guided manipulation techniques for robotic autonomous underwater panel interventions", *Annual Reviews in Control*, vol. 40, 2015, Pages 201–211. Q2. <u>https://doi.org/10.1016/j.arcontrol.2015.09.012</u>



- José J Fernández, Mario Prats, Pedro J Sanz, et al. (2013), "Grasping for the Seabed: Developing a New Underwater Robot Arm for Shallow-Water Intervention", in IEEE Robotics & Automation Magazine, IEEE, vol. 20 (4), pp. 121 – 130. Q1. <u>http://dx.doi.org/10.1109/MRA.2013.2248307</u>
- Mario Prats, Ángel P. del Pobil, Pedro J. Sanz (2013). "Robot Physical Interaction through the combination of Vision, Tactile and Force Feedback"; Int. Book, Springer Tracts in Advanced Robotics, Volume 84. ISBN: 978-3-642-33240-1. <u>https://doi.org/10.1007/978-3-642-33241-8</u>

C.2. Research projects EUROPEAN

Title of the project = Embedded Electronic solutions for Polymer Innovative Scanning Tools using Light Emitting devices for diagnostic Routines – El-Peacetolero Coordinator = Mohamed Ben Chouikha (SORBONNE UNIVERSITE, France) UJI funding = 149.985€

Financing Institution = European Union H2020; Project Ref. = H2020-EURATOM-1 (ID: 945320)

Project length = 2020 - 2024 (48 months); Type of participation = UJI researcher

Title of the project = MARINE ROBOTS AND DEXTEROUS MANIPULATION FOR ENABLING AUTONOMOUS UNDERWATER MULTIPURPOSE INTERVENTION MISSIONS - TRIDENT Coordinator = Pedro J Sanz (UJI, Spain) UJI funding= 456.988€ Financing Institution = European Union FP7; Project Ref. = FP7- ICT-248497

Project length = 2010 - 2013 (36 months)

Title of the project = EMERGENCE OF COGNITIVE GRASPING THROUGH EMULATION, INTROSPECTION AND SURPRISE - GRASP Coordinator = Danica Kragic (KTH, Sweden) UJI funding = 680.621€ Financing Institution = European Union FP7; Project Ref. = FP7- ICT-215821 Project length = 2008 - 2012 (48 months); Type of participation = UJI researcher

SPANISH Coordinated (Consortium of three Universities: UJI, UdG, UIB)

Title of the project = TWIN ROBOTS FOR COOPERATIVE UNDERWATER INTERVENTION MISSIONS – TWINBOT Coordinator = Pedro J Sanz; UJI funding = 137.940 € Financing Institution = MINECO; Project Ref. = DPI2017-86372-C3-1-R Project length = 2018 – 2020 (36 months)

Title of the project = Multifunctional coopERative marine roBOTs for intervention DomainS- MERBOTS Coordinator = Pedro J Sanz; UJI funding = 185.130 € Financing Institution = MINECO; Project Ref. = DPI2014-57746-C3-1-R Project length = 2015 - 2017 (36 months)

Title of the project = Multisensory Based Underwater Intervention through Cooperative Marine Robots- TRITON Coordinator = Pedro J Sanz; UJI funding = 176.660 € Financing Institution = MICINN; Project Ref. = DPI2011-27977-C03-01 Project length = 2012 - 2014 (36 months)

Title of the project = Reconfigurable AUV for Intervention – RAUVI Coordinator = Pedro J Sanz; UJI funding = $170.400 \in$ Financing Institution = MEC; Project Ref. = DPI2008-06548-C03-01 Project length = 2009 - 2011 (36 months)

Valencian Government (GVA)

Title of the project = RESEARCH CENTER IN ROBOTICS AND UNDERWATER TECHNOLOGIES - CIRTESU Coordinator = Pedro J Sanz



CONSORTIUM: UJI + CSIC (IATS); Funding = 564.101,25 € Financing Institution = GVA (Generalitat Valenciana) & EU (FEDER) Project Ref. = IDIFEDER/2018/013; Project length = 2018 – 2020 (36 months)

Title of the Project = MARINE ROBOTICS OF INTERVENTION: MANIPULATION, LOCATION, COMMUNICATIONS AND HRI Coordinator = Pedro J Sanz CONSORTIUM: UJI & University of Valencia; Funding = 195.410 € Financing Institution = GVA (Generalitat Valenciana) Project Ref. = PROMETEO/2016/066; Project length = 2016 – 2019 (48 months)

C.3. Contracts, technological or transfer merits

Title of the Project = INTEGRATED SYSTEM FOR MONITORING AND SEARCHING FOR AQUATIC THREATS FOR DEFENSE - SIMBAAD Coordinator = Pedro J Sanz Contract Funding = 400.000 € Contracting Institution = Spanish Ministry of Defense (COINCIDENTE Program) Project Ref. = EXPEDIENTE N° 1003220002500; Project length = 2020 – 2022 (24 months)

C.4. Awards

- SNE 2020 Award for the Best Doctoral Thesis on Nuclear Science and Technology to G. Lunghi (developed at CERN, and co-directed by R Marín and PJ Sanz from UJI). Spanish Nuclear Society, Feb. 2021.
- **Prize to the best "Application-Oriented Paper Award".** IROS Workshop "New Horizons for Underwater Intervention Missions: from Current Technologies to Future Applications" hosted by the conference IROS, Madrid 5th October **2018**. Paper presented by G. Lunghi, R. Marin, M. Di Castro, A. Masi, and P. J. Sanz.
- "G. Giralt Doctorate Award". Annual prize awarded by the European network of excellence EURON, for the best European Doctoral Thesis in this context. This award has been awarded for the 2011 annuity to the thesis of Dr. Mario Prats, co-directed by PJ Sanz and previously defended at UJI (European Doctorate).

C.5. R&D Management (Referee)

- Referee for the Research Council of Norway (since 2017 and continues).
- MICINN: National Program for Industrial Design and Production (DPI). Member of the Spanish Assessment Commissions in the DPI program in the years 2004, 2009, 2014, and 2018.
- Referee for the National Agency for Evaluation and Foresight (ANEP). Different calls (since 2006, and continues).

C.6. International Stays at International Research Centers of Excellence

All the research stays, mentioned below, have been funded through Grants from the Spanish Ministry.

- Technische Universität München (TUM, Munich, Germany); Date: 1/06/2016; Length (weeks): 12; Role: Guess Professor.
- LAR-DEIS (Laboratory of Automation and Robotics of D.E.I.S., Department of Electronics, Computer Science and Systems, University of Bologna, Italy); Date: 1/03/2008; Length (weeks): 32; Role: Guess Professor.
- Université Blaise Pascal (LASMEA) de Clermont-Ferrand (Aubiere, France); Date: 1/07/2002; Lengh (weeks): 12; Role: Guess Professor.
- Technische Universität München (TUM, Munich, Germany); Date: 1/08/2000; Length (weeks): 12; Role: Guess Professor.