

Fecha del CVA	27/11/2024
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### Parte A. DATOS PERSONALES

Nombre	JAVIER		
Apellidos	PASCAU GONZALEZ-GARZON		
Sexo	Hombre		
URL Web	<a href="https://igt.uc3m.es">https://igt.uc3m.es</a>		
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Open Researcher and Contributor ID (ORCID)	0000-0003-1484-731X		

#### A.1. Situación profesional actual

Puesto	CATEDRATICOS DE UNIVERSIDAD
Fecha inicio	2021
Organismo / Institución	Universidad Carlos III de Madrid
Departamento / Centro	BIOINGENIERIA / ESCUELA POLITECNICA SUPERIOR

#### A.3. Formación académica

Grado/Master/Tesis	Universidad / País	Año
Doctor por la Universidad Politécnica de Madrid dentro del Programa en Ingeniería de Telecomunicación	Universidad Politécnica de Madrid	2006
Ingeniero de Telecomunicación	Universidad Politécnica de Madrid	1999

### Parte B. RESUMEN DEL CV

Supervisor of 7 PhD theses defended in 2017-2023, and 3 ongoing Web of Science data: Total number of journal articles and proceedings: 149. SCI Journal articles: 90 (80% in Q1 or Q2). Total citations: 1974. H index: 26. Google Scholar data: total citations 3900. Average 2019-2022: 290. H index: 37. SCOPUS: Total articles and proceedings 128, 75% Q1. Total Citations: 2220. Average 2019-2022: 160. H index: 28.

Javier Pascau is Full Professor (four research periods or “sexenios”) in the Department of Bioengineering at Universidad Carlos III de Madrid. He received his degree on Telecommunication Engineering from Universidad Politécnica de Madrid in 1999, a Master in Biomedical Technology and Instrumentation in 2005 and his PhD from Universidad Politécnica de Madrid in 2006. He is part of the Biomedical Sciences and Engineering Lab (BSEL, lab IGT <https://igt.uc3m.es>) at Universidad Carlos III de Madrid, and is also senior researcher at Instituto de Investigación Sanitaria Gregorio Marañón.

His research areas include multimodal image quantification and registration both in clinical and preclinical applications, surgical guidance by combining image studies and tracking systems and machine learning methods for medical image analysis. He has published more than 90 papers in indexed journals, is co-inventor of two patents and has contributed to several proceedings in medical and engineering meetings. As principal investigator he has led more than 15 projects from competitive calls in Health Technology Evaluation, Public-Private collaboration, National Research Plan for Societal Challenges, Technological Development, EraPerMet H2020 and IRSES H2020. He collaborates with several international research groups in Image Guided Treatments, such as Brigham and Women’s Hospital in Boston (6 months visit in 2014) or Queen’s University in Kingston, Canada (6 months visit in 2022).

Dr. Pascau has published works on topics such as medical image analysis with deep learning techniques, neuroimaging quantification, multimodal fusion, radiotherapy, molecular and functional imaging, high resolution devices for animals or information systems in radiology. He collaborates with the clinical departments of Traumatology, Surgery, Radiodiagnosis, Radiation Oncology or Gynecology at Hospital Gregorio Marañón or Clínica Universidad de Navarra, in both research and advisory tasks (selection of imaging equipment and RIS/PACS systems). His group implemented a surgical theater with specific hardware for image guided procedures inside the radiation therapy department at Hospital G. Marañón to research in surgical navigation, intraoperative imaging

with ultrasound or surface scanning, 3D printing or image registration, to personalize medical treatments. Dr Pascau lectures on Medical Image Processing in both undergraduate (Biomedical Engineering) and graduate level (Masters in Machine Learning for Health and Clinical Eng.). He has been supervisor of 7 PhD theses defended in 2017-2023, and 3 ongoing. From 2016 to 2020 he was deputy director of the Biomedical Eng. Degree at Univ. Carlos III de Madrid.

### Parte C. LISTADO DE APORTACIONES MÁS RELEVANTES

- 1 Artículo científico. Diez-Montiel, Alberto; Pose-Diez-de-la-Lastra, Alicia; Gonzalez-Alvarez, Alba; Salmeron, Jose I.; Pascau, Javier; Ochandiano, Santiago. 2024. Tablet-based Augmented reality and 3D printed templates in fully guided Microtia Reconstruction: a clinical workflow. 3D PRINTING IN MEDICINE. SPRINGER NATURE. 10-1.
- 2 Artículo científico. Lydia; José Antonio; Rubén; Alba; Javier. 2024. Manufacturing evaluation of seven medical device companies during the production of a 3D-printed titanium pelvic implant. International Journal of Bioprinting. ACCSCIENCE PUBLISHING. 10-2, pp.0140.
- 3 Artículo científico. Nicolas-Saenz, Laura; Ledezma, Agapito; Pascau, Javier; Munoz-Barrutia, Arrate. 2023. ABANICCO: A New Color Space for Multi-Label Pixel Classification and Color Analysis. SENSORS. 23. WOS (2) <https://doi.org/10.3390/s23063338>
- 4 Artículo científico. Cubero, Lucia; Garcia-Elcano, Laura; Mylona, Eugenia; et al; Pascau, Javier. 2023. Deep learning-based segmentation of prostatic urethra on computed tomography scans for treatment planning. PHYSICS & IMAGING IN RADIATION ONCOLOGY. 26. WOS (1) <https://doi.org/10.1016/j.phro.2023.100431>
- 5 Artículo científico. Pose-Diez-de-la-Lastra, Alicia; Ungi, Tamas; Morton, David; Fichtinger, Gabor; Pascau, Javier. 2023. Real-time integration between Microsoft HoloLens 2 and 3D Slicer with demonstration in pedicle screw placement planning. INTERNATIONAL JOURNAL OF COMPUTER ASSISTED RADIOLOGY AND SURGERY. ISSN 1861-6410. <https://doi.org/10.1007/s11548-023-02977-0>
- 6 Artículo científico. Alfano, Felicia; Cordero-Grande, Lucilio; Ortuno, Juan E.; et al; Ledesma-Carbayo, Maria J. 2022. Breast Tumor Localization by Prone to Supine Landmark Driven Registration for Surgical Planning. IEEE ACCESS. 10. ISSN 2169-3536. <https://doi.org/10.1109/ACCESS.2022.3223658>
- 7 Artículo científico. Cubero, Lucia; Castelli, Joel; Simon, Antoine; de Crevoisier, Renaud; Acosta, Oscar; Pascau, Javier. 2022. Deep Learning-Based Segmentation of Head and Neck Organs-at-Risk with Clinical Partially Labeled Data. ENTROPY. 24. <https://doi.org/10.3390/e24111661>
- 8 Artículo científico. Moreta-Martinez, Rafael; Rubio-Perez, Ines; Garcia-Sevilla, Monica; Garcia-Elcano, Laura; Pascau, Javier. 2022. Evaluation of optical tracking and augmented reality for needle navigation in sacral nerve stimulation. COMPUTER METHODS AND PROGRAMS IN BIOMEDICINE. 224. ISSN 0169-2607. <https://doi.org/10.1016/j.cmpb.2022.106991>
- 9 Artículo científico. Pose-Diez-de-la-Lastra, Alicia; Moreta-Martinez, Rafael; Garcia-Sevilla, Monica; et al; Pascau, Javier. 2022. HoloLens 1 vs. HoloLens 2: Improvements in the New Model for Orthopedic Oncological Interventions. SENSORS. 22. <https://doi.org/10.3390/s22134915>
- 10 Artículo científico. Garcia-Sevilla, Monica; Moreta-Martinez, Rafael; Garcia-Mato, David; Arenas de Frutos, Gema; Ochandiano, Santiago; Navarro-Cuellar, Carlos; Sanjuan de Moreta, Guillermo; Pascau, Javier. 2022. Surgical Navigation, Augmented Reality, and 3D Printing for Hard Palate Adenoid Cystic Carcinoma En-Bloc Resection: Case Report and Literature Review. FRONTIERS IN ONCOLOGY. 11. ISSN 2234-943X. <https://doi.org/10.3389/fonc.2021.741191>
- 11 Artículo científico. von Haxthausen, Felix; Moreta-Martinez, Rafael; Pose Diez de la Lastra, Alicia; Pascau, Javier; Ernst, Floris. 2022. UltrARsound: in situ visualization of live ultrasound images using HoloLens 2. INTERNATIONAL JOURNAL OF COMPUTER ASSISTED RADIOLOGY AND SURGERY. 17. ISSN

- 1861-6410. <https://doi.org/10.1007/s11548-022-02695-z>
- 12 Artículo científico. Naredo, Esperanza; Pascau, Javier; Damjanov, Nemanja; et al; Matucci-Cerinic, Marco. 2020. Performance of ultra-high-frequency ultrasound in the evaluation of skin involvement in systemic sclerosis: a preliminary report. RHEUMATOLOGY. 59. ISSN 1462-0324. WOS (3) <https://doi.org/10.1093/rheumatology/kez439>
  - 13 Artículo científico. DAVID GARCIA MATO; S. OCHANDIANO; GARCÍA SEVILLA, MÓNICA; et al; (10/10) Pascau, J. (AC). 2019. Craniostomosis surgery: workflow based on virtual surgical planning, intraoperative navigation and 3D printed patient-specific guides and templates. Scientific Reports. 9, pp.17691. ISSN 2045-2322. <https://doi.org/10.1038/s41598-019-54148-4>
  - 14 Artículo científico. GARCIA-VAZQUEZ, V.; MARINETTO, E.; JUAN ANTONIO SANTOS MIRANDA; FELIPE A CALVO; DESCO MENÉNDEZ, MANUEL; (6/6) JAVIER PASCAU GONZALEZ GARZON. 2013. Feasibility of integrating a multi-camera optical tracking system in intra-operative electron radiation therapy scenarios. PHYSICS IN MEDICINE AND BIOLOGY. 58/24, pp.8769-8782. ISSN 0031-9155. <https://doi.org/10.1088/0031-9155/58/24/8769>
  - 15 Artículo científico. (1/9) JAVIER PASCAU GONZALEZ GARZON; JUAN ANTONIO SANTOS MIRANDA; FELIPE A CALVO; et al; DESCO MENÉNDEZ, MANUEL. 2012. An innovative tool for intraoperative electron beam radiotherapy simulation and planning: description and initial evaluation by radiation oncologists. INTERNATIONAL JOURNAL OF RADIATION ONCOLOGY BIOLOGY PHYSICS. 83/2, pp.287-295. ISSN 0360-3016. <https://doi.org/10.1016/j.ijrobp.2011.12.063>

### C.3. Proyectos o líneas de investigación

- 1 Proyecto. PID2023-149604OB-I00, Fair solutions for a clinical implementation of AI in the RT Workflow (FAIR-RT).. Ministerio de Ciencia, Innovación e Universidades. Pascau 1. (Universidad Carlos III de Madrid). 01/09/2024-31/08/2027. 241.250 €.
- 2 Proyecto. GA - 853989, EUROPEAN REGIMEN ACCELERATOR FOR TUBERCULOSIS. EUROPEAN COMMISSION RESEARCH EXECUTIVE AGENCY. JUAN JOSE VAQUERO LOPEZ. (Universidad Carlos III de Madrid). 01/01/202031/12/2025. 5.804.800 €.
- 3 Proyecto. Acelerando la transformación digital en salud materno-fetal mediante herramientas de simulación y entrenamiento. Accelerating digital transformation in maternal-fetal health through simulation and training tools. Ministerio de Ciencia e Innovación. Pascau González-Garzón 1. (Universidad Carlos III de Madrid). 01/12/202230/11/2024. 237.130 €.
- 4 Proyecto. Personalized Planning in RadioTherapy Through Integrative Modeling of Local Dose Effect and New Dosimetric Constraints (PrePlanRT). Comisión Europea. EraPerMed JTC 2020 (financiado en España por el Instituto de Salud Carlos III y la AECC). (Universidad Carlos III de Madrid). 01/01/2021-31/12/2023. 127.050 €.
- 5 Proyecto. Custom Medical Device Development. Programa CONEX-UC3M (Eu Marie-Curie COFUND). EUROPEAN COMMISSION RESEARCH EXECUTIVE AGENCY. Javier Pascau González-Garzón. (Universidad Carlos III de Madrid). 23/11/202022/11/2023. 28.800 €.
- 6 Proyecto. PI18/01625, ENTRENAMIENTO Y NAVEGACION QUIRURGICA PARA UNA MEDICINA DE PRECISION. Instituto de Salud Carlos III. Javier Pascau González-Garzón. (Hospital General Universitario Gregorio Marañón). 01/01/201931/12/2021. 104.967,5 €. Investigador principal.
- 7 Proyecto. Planificación y guiado multimodal en cirugía y tratamiento de cáncer de mama. JAVIER PASCAU GONZALEZ GARZON. (MINISTERIO DE ASUNTOS ECONOMICOS Y TRANSFORMACION DIGITAL). 01/01/2014-30/09/2017.
- 8 Proyecto. 317446, INFIERI: Intelligent Fast Interconnected and Efficient devices for Frontier Exploitation in Research and Industry. EUROPEAN COMMISSION RESEARCH EXECUTIVE AGENCY. JUAN JOSE VAQUERO LOPEZ. (Universidad Carlos III de Madrid). 01/02/2013-31/01/2017. 232.181,62 €.
- 9 Proyecto. GA-269300, TAHITI: Improving Therapy and intervention through imaging. EUROPEAN COMMISSION RESEARCH EXECUTIVE AGENCY. JAVIER PASCAU GONZALEZ GARZON. (Universidad Carlos III de Madrid). 17/12/201415/04/2016. 23.100 €.
- 10 Proyecto. IPT-2012-0401-300000, Tecnologías para Procedimientos Intraoperatorios Seguros y Precisos.. MINISTERIO DE ASUNTOS ECONOMICOS Y TRANSFORMACION DIGITAL. JAVIER PASCAU GONZALEZ GARZON. (Universidad Carlos III de Madrid). 01/01/2013-31/03/2016. 326.507,6 €.
- 11 Proyecto. IPT-300000-2010-3, Simulación y tratamiento guiado por imagen en radioterapia (PRECISION). MINISTERIO DE CIENCIA E INNOVACIÓN. JAVIER PASCAU GONZALEZ

GARZON. (FUNDACIÓN PARA LA INVESTIGACIÓN BIOMÉDICA DEL HOSPITAL GREGORIO MARAÑÓN). 23/06/2010-31/12/2013. 183.700 €.

- 12 Proyecto. PI08/90473, Evaluación de la viabilidad y utilidad clínica de una herramienta de planificación y simulación de radioterapia intraoperatoria. MINISTERIO DE CIENCIA E INNOVACIÓN. JAVIER PASCAU GONZALEZ GARZON. (FUNDACION PARA INVESTIGACION BIOMEDICA HOSP GREGORIO MARAÑÓN). 01/01/2009-30/06/2010. 49.126 €.
- 13 Contrato. Segmentación de CT y cálculo de trayectorias para tornillos pediculares utilizando métodos basados en inteligencia artificial DIGITAL ANATOMICS S.L.. Pascau González-Garzón. 01/06/2022-01/06/2023. 15.000 €.
- 14 Contrato. Soluciones de realidad virtual y aumentada para educación, entrenamiento y otras aplicaciones médicas utilizando software abierto EBATINCA. 01/09/2021-31/12/2021. 8.000 €.
- 15 Contrato. Impresión 3D de accesorios para tratamiento radioterápico Clínica Universidad de Navarra. Pascau González-Garzón. 01/03/2021-01/06/2021. 5.280 €.

#### C.4. Actividades de transferencia de tecnología/conocimiento y explotación de resultados

- 1 JAVIER PASCAU GONZALEZ GARZON; MORETA MARTINEZ, RAFAEL; CELIA SANCHEZ RAMOS; CRISTINA BONNIN ARIAS. P201800020. Método y aparato para el reconocimiento biométrico corneal ES2662912 España. 06/09/2019. Universidad Carlos III de Madrid.
- 2 DESCO MENÉNDEZ, MANUEL; M.F. VALDIVIESO; JUAN JOSE VAQUERO LOPEZ; JAVIER PASCAU GONZALEZ GARZON; C. ILLANA; FELIPE A CALVO. PCT/ES2008/0002. Planning systems for intraoperative radiation therapy and method for carrying out said planning US 2011/0052036 03/03/2011. GMV Aerospace and Defence, S.A..
- 3 DESCO MENÉNDEZ, MANUEL; JAVIER PASCAU GONZALEZ GARZON; JUAN JOSE VAQUERO LOPEZ; ABELLA GARCÍA, MÓNICA; SISNIEGA CRESPO, ALEJANDRO. 02/2010/4412. Mongoose 10/03/2010. FUNDACIÓN PARA LA INVESTIGACIÓN BIOMÉDICA DEL HOSPITAL GREGORIO MARAÑÓN.