



Pablo Villacorta Aylagas

Telecommunications Engineer

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May 29, 2000

Valladolid, Spain



About Me

I am a Telecommunications Engineer interested in all its areas, from signal processing to programming and telematics, including disciplines such as electronics and instrumentation. I am also passionate about Magnetic Resonance Imaging (MRI), a field that brings together the best of each discipline and offers room for innovation to improve people's health.

Currently, I am working as a researcher in the Image Processing Lab (LPI) at Universidad de Valladolid (Spain), where I contribute to the [KomaMRI.jl](#) project while developing a [web-based tool](#) for MRI pulse sequence editing and simulation.

Resume

Experience

MRI Researcher

Image Processing Lab (LPI) – Universidad De Valladolid

2022 – Present

Working on MRI simulation frameworks, with a focus on modeling complex phenomena like blood flow and non-rigid motion. Also involved in optimizing simulation pipelines and improving algorithms performance and accuracy.

Education

Universidad De Valladolid, Spain

MSc In Telecommunications Engineering

2022 – 2023

Habilitating MSc focused on real-world projects. We designed an IoT datalogger with LoRa and sensor integration, and deployed a 4G-based system for real-time video processing and AI traffic sign detection.

Universidad De Valladolid, Spain

BSc In Telecommunications Engineering

2018 – 2022

Acquired a solid foundation in signal processing, programming, electronics, systems engineering, and telematics.

Languages

English – C1 Level

Certified With B2 First – Cambridge

2022

Score: 182

Publications



Conference Contributions

2024

- **Flexible Motion Models For GPU-Accelerated MRI Simulations With Complex Motion And Flow Using KomaMRI**
ESMRMB 2024, Barcelona, Spain
P. Villacorta-Aylagas, C. Castillo-Passi, R.M. Menchón-Lara, J. Anatol-Hernández, P. Irarrázaval, J. Sierra-Pallares, C. Alberola-López
[Abstract] [Poster]
- **Proof Of Concept For The Simulation Of Diffusion Models In The Myocardium Through KomaMRI**
CASEIB 2024, Sevilla, Spain
J. R. Rodríguez-Galván, **P. Villacorta-Aylagas**, S. Merino-Caviedes, C. Castillo, J. Sánchez-González, D. Filgueiras-Rama, A. Tristán-Vega, P. Irarrázaval, C. Alberola-López
- **New Methods For Defining Dynamic Phantoms In KomaMRI**
ISMRM Iberian Chapter 2024, Porto, Portugal
P. Villacorta-Aylagas, C. Castillo-Passi, R.M. Menchón-Lara, J. Anatol-Hernández, P. Irarrázaval, J. Sierra-Pallares, C. Alberola-López
- **Synthetic Spin Trajectory Generation For Advanced Flow Phantom In MRI Simulation**
ISMRM Iberian Chapter 2024, Porto, Portugal
J. Anatol-Hernández, J. Sierra-Pallares, **P. Villacorta-Aylagas**, C. Castillo-Passi, R.M. Menchón-Lara, P. Irarrázaval, C. Alberola-López
- **A KomaMRI Phantom Extension For Integrated Dynamic Imaging**
ISMRM 2024, Singapore
P. Villacorta-Aylagas, C. Castillo-Passi, R. M. Menchón-Lara, P. Irarrázaval, J. B. Sierra-Pallares, C. Alberola-López

2023

- **A Web Version Of KomaMRI. Sequence Editor And Remote Execution**
ISMRM Iberian Chapter 2023, Valladolid, Spain
P. Villacorta-Aylagas, I. Fernández-Arias, C. Castillo-Passi, P. Irarrázaval, F. Simmross-Wattenberg, M. Rodríguez Cayetano, C. Alberola-López
- **Parallel Device-Agnostic Simulation Of Magnetic Resonance Imaging Sequences**
ISMRM Iberian Chapter 2023, Valladolid, Spain
I. Fernández-Arias, **P. Villacorta-Aylagas**, C. Castillo-Passi, P. Irarrázaval, F. Simmross-Wattenberg, M. Rodríguez-Cayetano, C. Alberola-López

2022

- **A Cross-Platform Editor And Simulator Of Magnetic Resonance Imaging Sequences. Design And Implementation**
CASEIB 2022, Valladolid, Spain
P. Villacorta-Aylagas, I. Fernández-Arias, C. Castillo-Passi, P. Irarrázaval, F. Simmross-Wattenberg, M. Rodríguez Cayetano, C. Alberola-López
- **Simulación Paralela Multidispositivo De Secuencias De Imagen Por Resonancia Magnética**
CASEIB 2022, Valladolid, Spain
I. Fernández-Arias, **P. Villacorta-Aylagas**, C. Castillo-Passi, P. Irarrázaval, F. Simmross-Wattenberg, M. Rodríguez-Cayetano, C. Alberola-López