



✉ guillermovillanuevabenito@gmail.com

☎ 605338916

📍 Barcelona, Spain

in [LinkedIn](#)

🔗 [Google scholar profile](#)

🐙 [GitHub](#)

AREAS OF EXPERTISE ★

Deep Learning

Machine Learning

Computer Vision

Medical Imaging

Multimodal AI

Vision-Language Models

Healthcare AI

TECHNICAL SKILLS 🛠️

Python

PyTorch

Hugging Face

scikit-learn

MONAI

OpenCV

SimpleITK

DICOM

NIFTI

Git

GitHub

Docker

Wandb

C++

LaTeX

LANGUAGES 🌐

- **Spanish** ● ● ● ● ●
Native or bilingual proficiency

- **English** ● ● ● ● ○
Full professional proficiency (B2/C1)

- **Catalan** ● ● ● ○ ○
Limited working proficiency

- **Italian** ● ● ○ ○ ○
Limited working proficiency

Guillermo Villanueva Benito

PhD Fellow | MSc in Applied Mathematics | BSc in Mathematics | BEng in Engineering Physics

PhD fellow working at the intersection of artificial intelligence, medical imaging and cardiovascular research. Graduate from the Interdisciplinary Higher Education Center (CFIS) at the Universitat Politècnica de Catalunya (UPC).

My background combines mathematics and engineering with a strong interest in translating methodological advances into solutions for real-world and clinically relevant problems. My current research focuses on multimodal AI cardiac magnetic resonance imaging.

I am currently seeking an industry research internship where I can contribute as an research scientist, particularly in project involving AI and healthcare while gaining experience in translation research into real-world application.

WORK EXPERIENCE

◆ PhD: AI for Cardiac MRI, Diagnostic Support and Clinical Workflow Automation

📅 Dec 2023 - Present (Full-time)
Digital Health Unit

- Development of **deep learning models** in cardiac MRI for **diagnostic support, clinical workflow automation** and **standardized reporting**, in close collaboration with clinical teams.

📍 Barcelona



◆ Data Scientist

📅 Nov 2022 - Dec 2023 (Full-time)
Biomedical Data Science Group

- Analyze **biomedical data** and develop **explainable machine learning models** and **computer vision** techniques for research publications.

📍 Barcelona



◆ Graduate Visiting Researcher

📅 Feb 2022 - Sep 2022 (Part time)
Mathematical Biology and Computational Neuroscience Group

- Research work on **computational neuroscience, mathematical models** and **experimental data**.
- Master's thesis: *Network models in Neuroscience: from experimental data to theoretical properties*.

📍 New Jersey



◆ Operations Research Analyst

📅 Mar 2022 - Jul 2022 (Part-time)
Data and Strategy Team

- **Mathematical optimization** methods and simulation models for risk/ROI assessment.
- Develop practical and pragmatic approaches to solve business problems using **real-world data**.
- Collect **business** requirements and deliver easy-to-understand data analysis, results and recommendations to stakeholders.

📍 Barcelona



◆ Undergraduate Visiting Researcher

📅 Sep 2020 - Jul 2021 (Full-time)
Mathematical Biology and Computational Neuroscience Group

- Research work on **computational neuroscience** and **mathematical models**.
- Bachelor's thesis: *Neuronal oscillations level sets for activity constancy: from single neurons to networks*

📍 New Jersey



PUBLICATIONS



EDUCATION



- **2026.** CineScribe: LLM-based detection and mitigation of ambiguity in cine cardiac magnetic resonance reports [\[Link\]](#)
Computers in Biology and Medicine, Elsevier.
- **2025.** pLDH to Identify Severity in Imported Malaria: Implementing Smartphone Video Analysis for Rapid Clinical Decision-Making [\[Link\]](#)
Biosensors and Bioelectronics, Elsevier.
- **2025.** Postsynaptic frequency filters shaped by the interplay of synaptic short-term plasticity and cellular time scales. [\[Link\]](#)
Journal of Computational Neuroscience, Springer Nature.
- **2024.** Machine Learning for Anxiety and Depression Profiling and Risk Assessment in the Aftermath of an Emergency [\[Link\]](#)
Artificial Intelligence in Medicine, Elsevier

TIMELINE



◆ Master's degree in Advanced Mathematics and Mathematical Engineering

Barcelona



Sep 2021 - Oct 2022

Universitat Politècnica de Catalunya (UPC)
School of Mathematics and Statistics



- Applied mathematics curriculum focused on **data science** and **mathematical modelling**.
- Honors or excellence in 6 subjects.
- Non-curricular internship during the second semester.

◆ Bachelor's degree in Mathematics

Barcelona



Sep 2016 - Jul 2021

CFIS - Universitat Politècnica de Catalunya (CFIS-UPC)
School of Mathematics and Statistics



- A rigorous and proof-oriented curriculum with a robust **mathematical base**, providing a solid knowledge in its applications (**algorithms, computing**).
- Honors or excellence in 2 subjects.
- As part of the **CFIS-program** to course 2 degrees simultaneously.

◆ Bachelor's degree in Engineering Physics

Barcelona



Sep 2016 - Jul 2021

CFIS - Universitat Politècnica de Catalunya (CFIS-UPC)
School of Telecommunications Engineering



- Extensive curriculum with solid **physics** fundamental **principles** and their **applications** in key emerging technologies (photonics, robotics, telecommunications)
- Honors or excellence in 5 subjects.
- As part of the **CFIS-program** to course 2 degrees simultaneously.

AWARDS AND RECOGNITIONS



◆ Participation in the 2021 Dana Knox Student Research Showcase

Apr 2021

New Jersey Institute of Technology (NJIT)



- As a visiting researcher at NJIT, nominated and selected by the screening committee.

◆ Exchange student Scholarship

Feb 2021 - Jul 2021

CFIS - UPC



- A six-month scholarship to carry out my Bachelor's thesis at the New Jersey Institute of Technology.

◆ Tuition and Accommodation Scholarship

Sep 2016 - Jul 2020

CFIS - UPC



- Scholarship covering the price of a Bachelor's degree and housing in Barcelona.

◆ Acceptance to the CFIS programme/CFIS membership

Jul 2016

Interdisciplinary Higher Education Center (CFIS), Barcelona.



- Center of excellence at Universitat Politècnica de Catalunya (UPC) whose mission is to recruit, select and mentor high-motivated and academically outstanding students that pursue two bachelor's degrees simultaneously in the fields of Mathematics, Physics and Engineering.