Pere Lopez Gutierrez

pere.lg@gmail.com · perolope.github.io

RESEARCH INTERESTS

I develop deep learning and medical imaging methods for healthcare, especially cardiovascular health. My work combines advances in deep learning, self-supervised, and multimodal learning to build clinical AI tools.

EDUCATION

Universitat Autònoma de Barcelona, Barcelona, Spain *Sep. 2024 – Present*
Ph.D. Candidate in Medicine AI

Tutor: *Jose Rodriguez Palomares*

Supervisors: *Andrea Guala, Lydia Dux-Santoy*

Universitat Pompeu Fabra, Barcelona, Spain *Sep. 2022 – Jul. 2023*
MSc in Computational Biomedical Engineering

Universitat de Barcelona, Barcelona, Spain *Sep. 2015 – Jan. 2020*
BSc in Physics

RESEARCH EXPERIENCE

Vall d'Hebron Research Institute, Barcelona, Spain *Oct. 2023 – Present*
PhD Researcher

Supervisors: *Andrea Guala, Lydia Dux-Santoy*

KU Leuven, Leuven, Belgium *Apr. 2026*
Visiting Researcher

Supervisor: *Nicholas Cauwenberghs*

University of Edinburgh, Edinburgh, United Kingdom *May 2025*
Visiting Researcher

Supervisors: *Marc Dweck, Neil J. Craig*

Institute for Bioengineering of Catalonia, Barcelona, Spain *Sep. 2019 – Jan. 2020*
Research Intern

PROFESSIONAL EXPERIENCE

SDG Group, Barcelona, Spain *Feb. 2021 – Oct. 2023*

BI Data Consultant

Creaciència, Barcelona, Spain *Jun. 2019 – Mar. 2020*
Science Communicator

Climbat La Foixarda, Barcelona, Spain *Jun. 2018 – Mar. 2020*
Climbing Instructor

PUBLICATIONS

Journal Articles

1. Unsupervised clustering of intra-ventricular haemodynamic forces for the phenotyping of left ventricular function in non-ischaemic left ventricular cardiomyopathy
   L. Airale, A. Giustiniani, E. Ródenas-Alesina, J. Lozano-Torres, P. Escribano-Escribano, R. Vila-Olives, P. E. Tobias-Castillo, M. Calvo-Barceló, C. Badia-Molins, M. Cesareo, **P. Lopez-Gutierrez**, I. Ferreira-Gonzalez, A. Milan, J. Rodriguez-Palomares, A. Guala et al.
   European Heart Journal – Cardiovascular Imaging 2025
2. Mapping ^{18}F-FDG Positron Emission Tomography Uptake in the Aortic Wall and Thrombus: Validation and Reproducibility
   M. Bragulat-Arévalo, M. Ferrer-Cornet, L. Dux-Santoy, R. Oliveró-Soldevila, M. Garcia-Reyes, G. Teixidó-Turà, J. Garrido-Oliver, L. Galian-Gay, **P. Lopez-Gutierrez**, A. Catalá-Santarrufina, J. R. García-Garzón, N. Martinez-Esquerda, J. Solsona, I. Ferreira-González, S. Bellmunt-Montoya, J. Rodriguez-Palomares, A. Guala
   Applied Sciences 2025

PREPRINTS

[P1] Artificial intelligence for aortic valve calcium score quantification by echocardiography
P. Lopez-Gutierrez, A. Morales-Galán, L. Galian-Gay, J. Garrido-Oliver, L. Dux-Santoy, N. J. Craig, Z. Ye, J. M. Alegret, J. Bermejo, F. Calvo-Iglesias, E. Ferrer-Sistach, I. Méndez, J. M. Robledo Carmona, V. Sanchez, D. Saura, T. Sevilla, T. A. Foley, H. Cuellar-Calabria, I. Ferreira-González, H. I. Michelena, M. R. Dweck, A. Evangelista, G. Teixido-Tura, J. F. Rodríguez-Palomares, A. Guala et al.
medRxiv preprint Dec. 2025
ESC 2025 Moderated Poster · ESC D&AI 2025 Moderated Poster · EACVI 2025 Moderated Poster

PEER-REVIEWED ABSTRACTS

[A1] Automatic three-dimensional aortic strain mapping from four-dimensional computed tomography angiography
A. Catala-Santarrufina, J. Garrido-Oliver, A. Guala, G. Teixido-Tura, L. Galian-Gay, M. Ferrer-Cornet, M. Bragulat-Arevalo, **P. Lopez-Gutierrez**, A. Morales-Galan, R. Olivero-Soldevila, F. Valente, H. Cuellar-Calabria, I. Ferreira-Gonzalez, J. Rodriguez-Palomares, L. Dux-Santoy
ESC 2025 — Moderated Poster

[A2] Multi-modal bicuspid aortic valve classification: diagnostic agreement and accuracy
J. Solsona-Caravaca, A. Capolongo, A. Guala, L. Galian-Gay, **P. Lopez-Gutierrez**, J. Alegret, J. Bermejo, F. Calvo-Iglesias, E. Ferrer-Sistach, I. Mendez, J. Robredo Carmona, V. Sanchez, D. Saura,

T. Sevilla, J. Rodriguez-Palomares
ESC 2025

[A3] Automatic left-ventricular view detection and ejection fraction assessment by artificial intelligence models in echocardiography
A. Morales-Galán, **P. Lopez-Gutierrez**, J. Garrido-Oliver, L. Dux-Santoy, H. Majul, L. Rivas-Catoni, S. Martin-Grieve, M. Bragulat-Arevalo, M. Ferrer-Cornet, A. Catala-Santarrufina, G. Teixido-Tura, L. Galian-Gay, I. Ferreira-Gonzalez, J. Rodriguez-Palomares, A. Guala et al.
ESC Congress 2025 — Moderated Poster · EuroEcho 2024

[A4] Artificial intelligence for pre- and post-EVAR CT analysis: segmentation, landmark annotation, and endoleak detection
J. Garrido-Oliver, X. Tenezaca-Sari, T. Ribeiro, X. Faner Capo, L. Dux-Santoy, **P. Lopez-Gutierrez**, A. Catala-Santarrufina, M. Bragulat-Arevalo, M. Ferrer-Cornet, A. Morales-Galán, H. Cuellar-Calabria, J. Rodriguez-Palomares, F. Bastos Goncalves, S. Bellmunt-Montoya, A. Guala
ESC D&AI 2025 — Moderated Poster · EACVI 2025 — Moderated Poster

[A5] Echocardiography image quality assessment: human subjectivity and artificial intelligence prediction in multi-centre data
P. Lopez-Gutierrez, A. Morales-Galán, L. Dux-Santoy, J. Garrido-Oliver, H. Majul, L. Rivas Catoni, S. Martin Grieve, G. Prado, J. Solsona, G. Casas-Masnou, G. Teixido-Tura, L. Galian-Gay, I. Ferreira-Gonzalez, J. Rodriguez-Palomares, A. Guala et al.
EuroEcho 2024

[A6] Evaluación automática de mapas de deformación aórtica mediante tomografía computarizada 4D
A. Català-Santarrufina, A. Guala, J. Garrido-Oliver, G. Teixidó-Turà, R. Oliveró-Soldevila, M. Ferrer-Cornet, M. Bragulat-Arévalo, **P. Lopez-Gutierrez**, A. Morales-Galan, L. Galian-Gay, C. Badia, H. Cuéllar-Calabria, I. Ferreira-González, J. F. Rodriguez-Palomares, L. Dux-Santoy
SEC 2024

[A7] Mapeo de la absorción de fludesoxiglucosa F18 en imágenes de tomografía por emisión de positrones en la pared aórtica y el trombo
M. Bragulat-Arévalo, M. Ferrer-Cornet, L. Dux-Santoy, R. Oliveró-Soldevila, A. Carrasco-Poves, G. Teixido-Tura, J. Garrido-Oliver, L. Galian-Gay, **P. Lopez-Gutierrez**, A. Morales-Galán, A. Catalá-Santarrufina, J. Solsona, I. Ferreira-González, J. Rodriguez-Palomares, A. Guala
SEC 2024

[A8] Automatic assessment of three-dimensional aortic strain maps from multiphase Computed Tomography Angiography
A. Català-Santarrufina, J. Garrido-Oliver, G. Teixidó-Turà, L. Galian-Gay, M. Ferrer-Cornet, M. Bragulat-Arévalo, **P. Lopez-Gutierrez**, A. Morales-Galan, R. Olveró-Soldevila, C. Badia, H. Cuéllar-Calabria, I. Ferreira-González, J. Rodriguez-Palomares, A. Guala, L. Dux-Santoy
ETEV 2024

[A9] Aortic pre- and post-operative contrast-enhanced CT scan segmentation in endovascular aortic repair patients with deep learning
J. Garrido-Oliver, X. Tenezaca Sari, X. Faner Capó, L. Dux-Santoy, M. Ferrer-Cornet, M. Bragulat-Arévalo, A. Catalá-Santarrufina, A. Morales, **P. Lopez-Gutierrez**, M. E. Garcia Reyes, G. Teixido-Tura, I. Ferreira-Gonzalez, J. Rodriguez-Palomares, S. Bellmunt, A. Guala
ETEV 2024

[A10] Mapping ^{18}F-FDG PET uptake in the aortic wall and thrombus

M. Bragulat-Arévalo, M. Ferrer-Cornet, L. Dux-Santoy, R. Oliveró-Soldevila, A. Carrasco-Poves, G. Teixido-Tura, J. Garrido-Oliver, L. Galian-Gay, **P. Lopez-Gutierrez**, A. Morales-Galán, A. Catalá-Santarrufina, J. Solsona, I. Ferreira-González, J. Rodriguez-Palomares, A. Guala

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Pere Lopez Gutierrez · Barcelona, Catalunya, Spain · pere.lg@gmail.com