

Diogo Amaro

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Education

University of Glasgow, School of Mathematics and Statistics <i>Master's Thesis in Applied Mathematics</i>	<i>Jan 2025 - July 2025</i> <i>Grade: 19/20</i>
◦ Title: "Statistical Emulation of Complex Cardiac Models using Gaussian Processes"	
NOVA School of Science and Technology <i>Master of Engineering, MEng</i>	<i>Sept 2023 - Dec 2025</i> <i>Grade: 16/20</i>
NOVA School of Science and Technology <i>BSc in Biomedical Engineering</i>	<i>Sept 2020 - Jun 2023</i>

Publications

Modelling Passive Diastolic Filling of the Left Ventricle <i>Applied Mathematical Modelling, Elsevier</i>	<i>Preprint</i> ↗ <i>Oct 2025 (under review)</i>
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Experience

Research Intern <i>School of Mathematics and Statistics, University of Glasgow</i>	<i>Glasgow, Scotland</i> <i>Jan 2025 - July 2025</i>
◦ Developed a statistical emulator to model the behavior of left ventricle; ◦ Constructed a bayesian inference framework to estimate myocardial parameters; ◦ Conducted forward and inverse uncertainty quantification to assess the validity of the results.	
Research Assistant <i>NeuroPsyAI</i>	<i>Lisbon, Portugal</i> <i>Sept 2023 - June 2024</i>
◦ Applied statistical methods to analyze fMRI images and behavioral data; ◦ Implemented routines to process eye-tracking data and model decision-making under varying cognitive loads; ◦ Quantified neural responses under different experimental conditions.	
Research Engineer Intern <i>PLUX Biosignals</i>	<i>Lisbon, Portugal</i> <i>Jan 2023 - April 2023</i>
◦ Developed analysis procedures for electrodermal activity data under stress conditions; ◦ Optimized signal extraction methods to improve the accuracy of biomedical sensors.	

Projects

Incompressible Flow Optimization for an Arterial Bifurcation <i>Python, Git</i>	<i>Code</i> ↗
Statistical Emulator of the Left Ventricle during Diastolic Filling <i>Python, C, Git, JAX</i>	<i>Code</i> ↗
FEM Solver <i>Python, Git, ParaView, JAX</i>	<i>Code</i> ↗

Skills

Programming Languages: Python, C/C++, Matlab, SQL, R, Fortran
Domains: Numerical Analysis, PDEs, FEM, Mathematical Modelling, Optimization, Scientific Computing
Libraries/Frameworks: NumPy, SciPy, Sklearn, Gascoigne3D, FEniCS, Pytorch, Tensorflow, SymPy, Cython
Tools & Environments: Git, Linux, Jupyter Notebooks, LaTeX