

Diego Gazzoni, Ph.D. student

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in Diego Gazzoni

🌐 Institutional Page

Employment History

- Feb 2025 – Present **Teaching Tutor** University of Bologna, Italy.
Course: *"Laboratory of Biomedical and Informatics Engineering"* (B.Sc).
Provided teaching support, student assistance and practical demonstrations.
- May 2024 – Oct 2024 **Research Fellow** University of Bologna, Italy.
Topic: *In vitro and in silico analysis of membrane currents through molecular dynamics simulations.*




Education

- Nov 2024 – Present **Ph.D., Biomedical, Electrical and Systems Engineering** University of Bologna, Italy.
Field: *Structural Bioinformatics*
Topic: *Analysis of permeation events in transmembrane proteins.*
Supervisor: prof. Simone Furini
- Sep 2021 – Mar 2024 **M.Sc. in Biomedical Engineering (LM-21)** University of Bologna, Italy.
Final grade: 110/110.
Curriculum: Innovative Technologies in Diagnostics and Therapy.
Thesis title: *Computational Study of the Role of Funny Current in Atrioventricular Conduction by Multiscale Mouse Heart Models* (supervisors: dott. Eugenio Ricci, prof. Stefano Severi)
- Sep 2018 – Oct 2021 **B.Sc. Biomedical Engineering (L8)** University of Bologna, Italy.
Final grade: 106/110.
Thesis title: *Application of organic semiconductors for wireless IoT systems* (supervisor: prof. Claudio Fiegna).
- Sep 2012 – Jun 2018 **High School Diploma in ICT** ITT Blaise Pascal, Cesena, Italy.
Final grade: 83/100



Skills

- Programming **Python, MATLAB, Tcl/Bash scripting, C/C++, Java, L^AT_EX**
- Libraries & Tools **NumPy, SciPy, Pandas, PyTorch, Tkinter, Java Swing**
- Web **HTML, CSS, JavaScript, SQL**
- Scientific software **Simulink, VMD, NAMD, GROMACS**
- Generic software **MS Office, Google Chrome, Mozilla Firefox, FileZilla, Inkscape, Gimp**
- Operating Systems **Unix-like systems (MacOS/Linux Ubuntu and RHL), Windows**
- Development Tools **Vim, VSCode**
- Modeling & Simulation **Electrophysiology models, Molecular Dynamics, statistical analysis, Markov models**
- Machine Learning **K-Means, PCA, NNs classifiers and regressors, Autoencoders, RNNs**
- Bioengineering **Stanford Biodesign, EU MDR 2017/745, medical image segmentation and registration**
- Soft skills **Academic research, project development, problem solving, creativity, communication, teamwork.**
- Languages **Italian (native language), English (B2 level)**

Courses



- Feb 2025 – Jun 2025  **Deep Learning** course (M.Sc. in Computer Science and Engineering), University of Bologna – attended as Ph.D. training activity. Lecturer: Prof. Matteo Ferrara.
- May 2025  **HPC Molecular Modelling** 3-day course at CINECA, Casalecchio di Reno (Bo), Italy
- Mar 2025  **Advanced School on HPC Computing with GPU Accelerators** 5-day online course provided by CINECA, Italy.

Projects

- Oct 2023 - Mar 2024  **Mouse Atrioventricular Node Simulator.** Developed 1D and 2D electrophysiology models of AV node conduction using multiscale simulation. Implemented MATLAB and C versions.
- Feb 2023 - Jun 2023  **DoctorD Ulcer Care System.** Medical device prototype for diabetic skin lesion management via AI-based foot image analysis. Team project for M.Sc. course "Context Sensitive Design of Medical Devices".

Research Publications

Conference Proceedings

- 1 D. Gazzoni, C. Domene, and S. Furini, "Bps2025 - markov state models of conduction and selectivity in inactivating and non-inactivating kcsa channels," 3, vol. 124, Elsevier BV, Feb. 2025, 129a.  DOI: 10.1016/j.bpj.2024.11.730.
- 2 D. Gazzoni, E. Ricci, C. Bartolucci, and S. Severi, "In silico simulation of mouse atrioventricular conduction including sinus node and atrial myocardium," in *2024 Computing in Cardiology Conference (CinC)*, ser. CinC2024, vol. 51, Computing in Cardiology, Dec. 2024.  DOI: 10.22489/cinc.2024.123.