

# Pietro Laddomada

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## Education

10/2023 Master Degree in "Bioengineering for Neuroscience", *University of Padua*, Padova (PD), Italy

02/2020 Bachelor Degree in "Electronic Engineering", *UNIVPM Università Politecnica delle Marche*, Ancona (AN), Italy

06/2014 Scientific High School "Guglielmo Marconi", Pesaro (PU), Italy

## Skills

- **MATLAB**: acquired through BSc and MSc.
- **Phyton** : acquired through MSc.
- **R Language**: acquired through MSc and Metrum Research Group: «*R for Pharmacometrics*» online course.
- **Monolix**: acquired through MSc and «*Pharmacometrics Autumn School*» on Monolix Suite course.
- **C Language**: acquired through BSc.
- **Microsoft Office**
- **Adobe suite**: Lightroom, Photoshop.

## Certifications

- **Good Clinical Practice (GCP)**
- **Monolix**: «*Pharmacometrics Autumn School*» on Monolix Suite.

## Language

- **English**: B2
- **Spanish**: A2

## Thesis

11/2022 – 10/2023

"Bayesian Approach for dimensionality reduction of compartmental model parameters of the PET [18F]FDG tracer", *Bertoldo Alessandra*

*Department of Information Engineering, University of Padua*, Padova, Italy

- Quantification of macro/microparameters in [18]FDG PET at voxel level, via *Patlak* graphical analysis and *Compartmental modeling*, on subjects with *glioma*. Evaluation of various IDIF. Comparison with reduced model with constraint. Implementations of methods with prior information. Statistical analysis, evaluation of the models.

09/2019 - 02/2022

"Identification of prime numbers using trigonometric function for RSA cryptography needs"

Bachelor Degree Thesis, *Cancellieri Giovanni*

*Department of Information Engineering, UNIVPM*, Ancona, Italy

- Building a code in Matlab for generating Prime Numbers from conjectures about trigonometric functions. Specifically, how the zeros of these functions were related to The Prime Numbers, starting with one subset and generating new ones.

## Project History

09/2022 - 03/2023

"Wearable devices for ECG as an accessible way for Subject Identification using Deep Learning Techniques"

Class "Human Data Analytics", *Rossi Michele*

*Department of Mathematics, University of Padua*, Padova, Italy

- Machine Learning topics, Clustering techniques, and main architectures of Deep Neural Network;
- Implementation of a neural network in Python on a specific dataset. Collection of ECG data via a Wearable Device for Subject Identification, and the writing of the related scientific report;

03/2022 - 07/2022

"Can motor activity be considered a valuable biomarker for depression?"

Class "Biomarkers, Precision Medicine & Drug Development", *Veronese Mattia*

*Department of Information Engineering, University of Padua*, Padova, Italy

- Statistical analysis and assessment of a possible biomarker on a dataset consisting of patients affected by depression.

03/2022 - 07/2022

**Investigating the relationship between dynamic PET and resting state/ functional MRI data**

Class "Imaging for Neuroscience", Bertoldo Alessandra

Department of Information Engineering, University of Padua, Padova, Italy

- The Project aims to analyze the relationships between dynamic PET and MRI images, spanning the typical pre-processing of this data and analysis at the level of functional connectivity.

**Comparison of DOT reconstructed images obtained with and without short-separation (SS) channel regression**

Class "Imaging for Neuroscience", Brigadoi Sabrina

Department of Information Engineering, University of Padua, Padova, Italy

- Basics of functional near-infrared spectroscopy (fNIRS) and signal processing methods; diffuse optical tomography (DOT), high-density EEG, and image reconstruction from the above signals. The Project aims to compare DOT signal regression techniques.

09/2021 - 01/2022

Class "Biological Data Analysis", Sparacino Giovanni

Department of Information Engineering, University of Padua, Padova, Italy

- Implementation in MATLAB of Bayesian interpolation techniques applied on data collected from a Continuous Glucose Monitoring System (CGM) affected by noise. Optimization of raw deconvolution of biological data in the  $Z$  Transform domain.

09/2020 - 02/2021

Class "Modeling Methodology for Physiology and Medicine", Dalla Man Chiara

Department of Information Engineering, University of Padua, Padova, Italy

- Study of modeling methodologies applied to biological systems: formulation, identification, and validation of a model in relation to the purpose of the modeling process. Application of Weighted non-linear least squares, maximum likelihood, Bayesian, via MATLAB. Principles of application in Monolix of Nonlinear Mixed Effect Models.

## Other Activities

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- I have been tutoring math, physics, and other science subjects to high school science students and university students since the 1st year of the Bachelor.
- During Summer 2020, I worked as a bartender/waiter at a facility at the coast of Pesaro.
- I have been playing basketball since I was 5 years old, moving from the youth team of (ex) Scavolini Pesaro to the D series. I currently reconcile studying with this passion in the Promotion team 'Atletico Modigliani' of Padua.
- Passionate about photography, I pursue this interest purely for pleasure, although in the past I have worked on call for photo shoots at events.