



## Frederico José Ribeiro Pelogia

Computer Engineering  
MSc. Biomedical Engineering

### Contact Information

#### Cellphone:

+55 (12) 98120-1460

#### E-mail:

fredpelogia@outlook.com  
fpelogia@unifesp.br

#### Linkedin:

www.linkedin.com/in/fpelogia

#### Portfolio (GitHub):

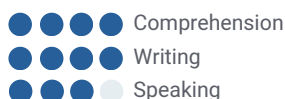
fpelogia.github.io

#### Address:

Av. Presidente Juscelino  
Kubitschek, 5490. Ap. 98  
São José dos Campos - SP  
Brazil

### Languages

Portuguese - Native  
English



### Skills

#### Programming Languages:

- Python
- C / C++
- NodeJS
- Typescript
- Angular / NestJS
- HTML, CSS, JS

#### Others

- Relational Database design and implementation (PostgreSQL, MySQL)
- ORM with Prisma ORM
- Deploy on Heroku / AWS Cloud
- Problem Solving / Modelling

### Publications

Multi-wave modelling and short-term prediction of ICU bed occupancy by patients with Covid-19 in regions of Italy  
Mathematical Modelling of Natural Phenomena 19, 13 - (2024)

Short-term prediction of COVID-19 deaths in Argentina  
IFMBE (International Federation for Medical and Biological Engineering) Proceedings - CLAIB 2022

Study of the COVID-19 pandemic trending behavior in Israeli cities  
IFAC Papers Online - 11th IFAC Symposium on Biological and Medical Systems BMS 2021

COVID-19 Trend Analysis in Mexican States and Cities  
43rd Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC) 2021

A support tool for planning classrooms considering social distancing between students  
Computational and Applied Mathematics (2022)

### Objectives

With a mixed background in research and corporate projects, I have been very interested in opportunities to apply computing and technology to solve problems in a wide variety of fields.

I have a special interest in Data Science, R&D, computational modelling & simulation

### Experience



#### Embraer - Software Developer II - EVE

2021 - Now

- Development of IT solutions for EVE Air Mobility's Support and Services division
- Full Stack development of web applications - Backend APIs (NodeJS/Python), Front-end (Angular), Database (PostgreSQL), Deploy with CI/CD Azure DevOps and AWS, Docker and K8S
- Collaborative planning of the data ecosystem and application architecture
- Working together with the business area (Reliability and Maintenance Costs), with active participation in solution planning
- Automating data collection and treatment processes (Python, VBA)
- Planning solutions and new projects in data science (NLP, SVM, OCR)

#### Embraer - IT Internship - Support & Services

- Support internal applications and APIs (Full-Stack - JS / Node) for Executive Aviation
- Automating processes with Python



#### MSc. Research Project - Mathematical Modelling

2021 - 2024

- Mathematical and computational modeling of the evolution of COVID-19 indicators, performing short-term forecasts of ICU bed occupancy by patients with the disease
- Model developed and implemented in Python, using libraries such as SciPy, Numpy, Matplotlib,
- Graphical interface to aid experimentation with the simulations using Streamlit (Python framework).



#### Undergraduate Research (FAPESP)

2019 - 2020

- "From scratch" implementation of deep neural networks using different optimization methods (GD, SGD, RMS Prop, Adam, Levenberg-Marquardt) applied to Fraud Detection.
- Collaboration with researchers in applied mathematics



#### Other Projects

2020 - 2022

- Planned Room: Tool for planning classrooms considering social distancing between students - Optimization problem
  - Collaboration with researchers in the fields of applied mathematics and operations research
- SABER-SUS: Full Stack development of a web application for clinical practice guideline recommendations for the treatment of chronic diseases

### Education



Federal University of São Paulo (UNIFESP)

2022 - 2024

Master's Degree in Biomedical Engineering

2018 - 2022

Computer Engineering

2018 - 2021

Interdisciplinary Bachelor in Science and Technology