Frederico José Ribeiro Pelogia

Computer Engineering
MSc. Biomedical Engineering

Contact Information

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Languages

Portuguese - Native
English

- Comprehension
- Writing
- Speaking

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