Luan Lima Freitas

+55 21 99557-2129
luanclimacfreitas@gmail.com
github.com/Luan-Lima-Freitas

Education

- **Federal University of Rio de Janeiro (UFRJ)**   Graduating in December 2022
  Bachelor in Applied Mathematics

  Relevant Coursework: *Numerical Methods, Linear Algebra, Machine Learning, Calculus of Probabilities, Statistical Inference, Mathematical Modeling, Image Processing, Optimization Methods*

Skills

- **Programming:** C/C++, Python, Julia

- **Frameworks:** Numpy, Matplotlib, Cvxpy, DiffEqFlux.jl

- **Other Tools:** Git, Google Colab, Jupyter Notebook, LaTeX

- **Languages:** Native Portugese, Fluent English, Intermediate Spanish, Beginner Mandarin

Projects and Activities

- **Undergraduate Research Project**   May 2018 - December 2019
  Research project on animal movement simulation and genetic algorithms. A mathematical model was developed where sensory input would go through a neural network to produce changes in the animal's direction and velocity of movement. The neural network's parameters were then optimized using a genectic algorithm programed in C++.

- **Undergraduate Research Project**   November 2021 - Present
  Research project on modeling and forecasting of epidemiological data using Universal Differential Equations. An UDE consistis of a mathematical model where an explicit term is substituted by a neural network. Modeling and forecasting of COVID-19 data from Rio de Janeiro was developed in Julia's Scientific Machine Learning framework DiffEqFlux.jl.

- **Tutoring for Scientific Computing Course**   March 2020 - October 2021
  Provided assistance for the students and developed assignments for the Scientific Computing Course at UFRJ.

Awards

- **Gold Medal for seven consecutive years at the Brazilian Mathematics Olympiad of Public Schools (OBMEP)** - 2010, 2011, 2012, 2013, 2014, 2015 and 2016.

- **Silver Medal at 2013's Brazilian Mathematics Olympiad (OBM)**

- **Honourable Mention at 2014's Brazilian Mathematics Olympiad (OBM)**

Interests

I am primarily interested in using technology (in particular machine learning) to develop products which will improve people's quality of life. I am also greatly interested in the scientific and ethical implications of the evolution of artificial intelligence.