Renan Alves de Oliveira

- Brazilian
- Maringá, Paraná, Brazil
- +55 (44) 99921-7655
- fisica.renan@gmail.com
- GitHub

Skills

Python 2/3	●●●●	Database	●●●○	Git/Github	●●●○
Statistical Analysis	●●●●	Data Analysis	●●●●	English	●●●●
Code Review	●●●○	Code Optimization	●●●○	Problem-solving	●●●●
Non-Structured Data	●●●○	Machine Learning	●●●○	Flexibility	●●●●
Data Visualization	●●●●	Dashboarding	●●○○	Cloud Computing	●●●●

Work and Research Experience

Graduate Researcher
August 2018 – Present

Federal University of Espírito Santo — Vitória, ES

- Creation of a unified database containing many astrophysical features of galaxies using SQL queries from several databases. Built a dashboard interface for users to access the data and download it from a server.
- Assisted students with Python/Unix/Shell, and code optimization for their main research projects.
- The administrator of a high-performance computer cluster used for scientific computations.

Visiting Researcher
November 2019 – May 2020

Flatiron Institute, Simons Foundation — New York, NY

- Development of a fast neural network emulator capable of tracing the evolution of dark matter particles in the universe.
- Summary statistics analysis of the data using the power spectrum correlation function comparing the neural network performance over semi-analytic models and the ground truth.
- Work accepted on the Machine Learning and the Physical Sciences workshop at the 2020 Conference on Neural Information Processing Systems.

Master Researcher
August 2016 – July 2018

Londrina State Univeristy — Londrina, PR

- Estimation of the properties of the universe using Pearson Chi-Squared test with meta-analysis for different models.
- Analyzed many gigabytes of data collected from the Planck satellite of the Cosmic Microwave Background Radiation.
- Development of software written in Python called polyMV, responsible to convert multipolar coefficients into vectors.

Intern
May 2014 – July 2014

Hydrologic Research Center — Del Mar, CA

- Analyzed and modeled numerically the soil stability responsible for landslides using Newtonian mechanics.

Education

PhD in Astrophysics | *Gravitational Lensing and AI*
August 2018 – *Expected* July 2022

Federal University of Espírito Santo — Vitória–ES, Brazil

Master's in Physics | *Computational Cosmology*
August 2016 – July 2018

Londrina State University — Londrina–PR, Brazil

Applied Physics | *Science Without Borders Program*
July 2013 – May 2014

California State University, San Marcos — San Marcos–CA, U.S.A.

Bachelor's in Physics
March 2010 – March 2016

Londrina State University — Londrina–PR, Brazil