



Renan Alves de Oliveira

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🐙 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 for Physics Sciences workshop at the 2020 Conference on Neural Information Processing Systems.

Master Researcher

August 2016 – July 2018

Londrina State University

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