Andresa Rodrigues de Campos, MS

andresarodriguescampos@gmail.com | (412) 304-5910 | Pittsburgh, PA 15232
linkedin.com/in/andresa-campos | GitHub.com/AndresaCampos

Doctoral candidate at Carnegie Mellon University, specialized in data-driven discovery in astrophysical systems and with over 5 years of experience applying machine learning and Bayesian inference techniques to large-scale datasets in cosmology. Comprehensive understanding of data analysis, with a strong background in programming in Python.

SKILLS

Specialties: Data Analysis | Machine Learning | Data Mining | Research | Modeling | Forecasting | Problem Solving
Programming & Tools: Python | PyTorch | mpi4py | Jupyter | Scipy | Pandas | Matplotlib | Seaborn | Spark | SQL

RELEVANT EXPERIENCE

Correlation One, *Data Science for All Fellowship* | **June 2023 – August 2023**

- Selected to participate in 7-week data science fellowship with learning facilitated through real-world data science business cases, and receiving mentorship and guidance from an industry data scientist
- Investigated the Impact of Weather on Electricity Pricing in Sweden using NordPool day-ahead prices
- Built a Neural Network using PyTorch that successfully predicts energy price trends based on weather features

Dark Energy Survey Collaboration, *Analysis Team Lead* | **October 2019 – Present**

- Led teams of between 5 and 8 scientists analyzing cosmological data, delivering high-quality results on schedule
- Designed and implemented a pipeline using unsupervised machine learning and Bayesian inference to efficiently and comprehensively analyze data from about 390 million galaxies, the largest galaxy catalog to date
- Enhanced a critical data analysis method by 66%, significantly boosting parameter constraining power and contributing to more precise data-driven decision-making.

Carnegie Mellon University, Research Assistant | **September 2018 – Present**

- Developed a groundbreaking method for empirical model selection in astrophysics, adopted by the Hyper Suprime-Cam Subaru Telescope and the Dark Energy Survey, main research collaborations in cosmology
- Found a 30% chance that a widely-adopted model in astrophysics is insufficient to model observational data, leading to a change of approach in the field and adoption of new model
- Co-authored over 40 publications featured in renowned peer-reviewed journals such as Monthly Notices of the Royal Astronomical Society. Cited over 3000 times with an h-index of 24

ADDITIONAL EXPERIENCE

McWilliams Software Development Series, Co-organizer | **September 2021 – Present**

- Planned and ran monthly sessions with tutorials related to software development and computing resources

Tartan Salsa, *President* | **August 2021 - July 2023**

- Led student organization promoting Latin dance and culture at Carnegie Mellon University, hosting weekly dance classes, with an average of 80 attendees per class
- Drafted budgets and presented funding applications, securing over $20,000 in funding over two years

Institute of Theoretical Physics, Universidade Estadual Paulista, Research Scholar | **March 2016 - July 2018**

- Co-led a large-scale analysis of 130 million galaxies using Bayesian posterior sampling
- Achieved a two-fold reduction in model parameter estimation error with respect to state-of-the-art

EDUCATION

Carnegie Mellon University, *Ph.D. Candidate in Physics* | **2018 - Present**
Universidade Estadual Paulista, *Master of Science in Physics* | **2018**
Universidade Federal de São João Del-Rei, *Bachelor of Science in Physics* | **2015**