PEDRO HENRIQUE SOARES DA SILVA PINHO NOGUEIRA

Researcher | Transitioning to Industry

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Scientist transitioning to data-driven roles, with 10+ years of experience in programming, statistical analysis, and automation. Specialist in Python, data visualization, and large datasets. Skilled in communicating complex results, working in diverse teams, and learning new tools quickly. Fluent in Portuguese, English, and Spanish. Eager to apply data processing and modeling skills to real world industry challenges.

EDUCATION

Ph.D. in Astrophysics

2020 – 2024 Universidad Diego Portales, Santiago, Chile

M.Sc. in Astrophysics

2018 – 2020 National Observatory (ON), Rio de Janeiro, RJ, Brazil

B.Sc. in Astrophysics | Minor in Computational Astronomy

2012 – 2018 Federal University of Rio de Janeiro (UFRJ) / Valongo Observatory, Brazil

WORK EXPERIENCE

Computational Astrophysics Researcher

2015 – 2024 Brazil / Chile

- Led/contributed to research projects involving large-scale simulations, time-series mining, and image processing in astrophysics
- First-author of peer-reviewed publications in high-impact journals: Nogueira et al. 2023, Nogueira et al. 2024
- Co-author of five scientific papers, with extensive experience in technical writing
- Speaker at 15+ international conferences in Portuguese, English, and Spanish
- Founder and representative in the student leadership program during Ph.D. studies at Universidad Diego Portales
- Active collaboration in multidisciplinary teams and participation in conferences

RELEVANT PROJECTS

Signal Detection in Images

2023 – 2024 </> Python, numpy, emcee, astropy, Jupyter, Git

- Optimized and applied routines to extract weak physical signals in faint/noisy astronomical images
- Applied Markov-Chain simulations to output best-fitting setting of orbital parameters using over 19 years of positional data

Radio Data Analysis Pipeline

2021 – 2023 </> Python, numpy, astropy, scipy, Jupyter, CASA, CASAviewer

- Applied Fourier-based filtering and interferometric techniques to extract key features of radio signal sources

Large-data Time-Series Analysis Pipeline

2018 – 2020 </> Python, pandas, numpy, astropy, Git

- Developed an automated pipeline to build, process and analyze time-series data from over 130,000 stars
- Reduced manual inspection time by 99% through automation and statistical filters
- Integrated reproducible Jupyter notebooks and Git workflows for team collaboration

N-body Simulations of Planetary Systems

2015 – 2024 </> Fortran, bash, LaTeX

- Optimized and applied numerical simulations and n-body modeling for orbital evolution of complex planetary systems

Internal Data Dashboard

2015 – 2025 </> Python, matplotlib, seaborn, Jupyter

- Created quick-look visualizations to summarize model outputs and simulation metrics
- Reduced preparation time for internal reviews by 80%

TECHNICAL SKILLS

- **Programming Languages:** Python (proficient); R, Fortran, SQL, HTML/CSS/JavaScript, bash
- **Operating Systems:** Linux (Ubuntu, Kubuntu), Windows, MacOS
- **Version Control & Collaboration:** Git, GitHub
- **Data Extraction, Data Processing & Data Analysis:** Python [requests, json, pandas, numpy, astropy]
- **Statistical Modeling & Machine Learning:** Python [scipy, statsmodels, scikit-learn, emcee, PyMC], R
- **Data Visualization:** Python [matplotlib, seaborn] – ***Jupyter Notebook***, SAO DS9
- **Scientific Writing & Productivity Tools:** Microsoft Office, Google Docs/Slides, Apple Pages, Keynote, LaTeX
- **Spreadsheets & Tabular Data Analysis:** MS Excel, LibreOffice Calc, Google Sheets, Apple Numbers
- **Development Environments:** VS Code, JupyterLab

SOFT SKILLS

- Clear communication, efficient collaboration, and teamwork across diverse profiles
- Critical and analytical thinking; problem-solving based on evidence
- Strong presentation skills for complex results; fast learner of new tools
- Creativity, intellectual curiosity, autonomy, and leadership in challenging environments