

PEDRO HENRIQUE ROCHA DE ANDRADE

Computer Engineering
de Andrade, P. H. R.

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ACADEMIC SUMMARY

I'm currently a Computer Engineering student with a passion for astronomy and data science. I have experience in scientific research, with a focus on computational astrophysics, and a history of publications in national conferences. I'm always seeking to learn and contribute to the scientific community, exploring new technologies and methodologies to advance our understanding of the universe. I have a hobby in animations and simulations, which allows me to create engaging visualizations to communicate complex concepts in an accessible way, with a focus on science outreach of physics-related content.

ACADEMIC BACKGROUND

Bachelor in Computer Engineering

Fluminense Federal Institute *Campus Bom Jesus do Itabapoana*
 August. 2023 – present  Rio de Janeiro, Brazil

Technical Degree in Informatics

Fluminense Federal Institute *Campus Bom Jesus do Itabapoana*
 February. 2020 – December. 2022  Rio de Janeiro, Brazil

RESEARCH PROJECTS

Analysis of Dynamical Simulations of Merging Galaxy Clusters

Fluminense Federal Institute *Campus Bom Jesus do Itabapoana*
 September. 2022 – March. 2023  Rio de Janeiro, Brazil

Junior Scientific Initiation Scholarship - CNPq
Supervisor: Dr. Ana Cecília Soja

Simulating the Impact of Satellites on Astronomical Observations

Fluminense Federal Institute *Campus Bom Jesus do Itabapoana*
 2024 – 2025  Rio de Janeiro, Brazil

Scholarship in the Scientific Initiation project - CNPq
Supervisor: Dr. Ana Cecília Soja

MobFog at IFFMaker

Fluminense Federal Institute *Campus Bom Jesus do Itabapoana*
 August. 2023 – February. 2024  Rio de Janeiro, Brazil

Scholarship in the Scientific Initiation project - IFF
Supervisor: Dr. Ana Cecília Soja

Anomaly Detection in Stars of the Milky Way: Exploring Data from Gaia and Other Surveys with Machine Learning

Fluminense Federal Institute *Campus Bom Jesus do Itabapoana*
 2025 – present  Rio de Janeiro, Brazil

Scholarship in the Scientific Initiation project - CNPq
Supervisor: Dr. Ana Cecília Soja and Dr. Maria Luiza Linhares Dantas

EXTERNAL COURSES

Networks

Fluminense Federal Institute *Campus Bom Jesus do Itabapoana*
 August. 2020  Rio de Janeiro, Brazil

Operational Systems

Fluminense Federal Institute *Campus Bom Jesus do Itabapoana*
 August. 2021  Rio de Janeiro, Brazil

Server Administration

Fluminense Federal Institute *Campus Bom Jesus do Itabapoana*
 August. 2022  Rio de Janeiro, Brazil

RESEARCH INTERESTS

EVENTS

Feiras de Ciências

21st Brazilian Science and Engineering Fair

Poster – FEBRACE

Analysis of dynamic simulations of galaxy cluster mergers

2023 • São Paulo, Brazil

40th International Science and Technology Fair

Poster – MOSTRATEC

Analysis of dynamic simulations of galaxy cluster mergers

2023 • Novo Hamburgo, Brazil

IX Brazilian Science Initiation Fair

Poster – FEBIC

Simulating the Impact of Satellites on Astronomical Observations

2024 • Pomerode, Brazil

XVI Scientific and Technological Exhibition of the Açaí Institute

Poster – MCTIA

Simulating the Impact of Satellites on Astronomical Observations

2025 • Belém, Brazil

Congressos

44° CONUBES

Participant – CONUBES

2022 • Brasília, Brazil

XV Scientific and Technological Initiation Congress and IX Fluminense Congress of Postgraduate Studies

Oral Presentation – CONFICT

Simulating the Impact of Satellites on Astronomical Observations

2024 • Campos dos Goytacazes, Brazil

XVI Scientific and Technological Initiation Congress and X Fluminense Congress of Postgraduate Studies

Oral Presentation – CONFICT

Simulating the Impact of Satellites on Astronomical Observations

2025 • Campos dos Goytacazes, Brazil

XLVIII Annual Meeting of the Brazilian Astronomical Society

Poster – SAB

Stellar properties and chemical features of the Gaia Catalogue of Nearby Stars observed by GALAH DR4

2025 • Caxambu, Brazil

XVII Scientific and Technological Initiation Congress and XI Fluminense Congress of Postgraduate Studies

Talk – CONFICT

Stellar properties and chemical features of the Gaia Catalogue of Nearby Stars observed by GALAH DR4

2026 • Campos dos Goytacazes, Brazil

78ª Annual Meeting of Brazilian Society to Science Progress

Poster – SBPC

Stellar properties and chemical features of the Gaia Catalogue of Nearby Stars observed by GALAH DR4

2026 • Niterói, Brazil

Winter School of Astrophysics

Poster

Unveiling the Solar vicinity: unsupervised mapping stellar populations with GCNS and GALAH DR4 using t-SNE

2026 • Rio de Janeiro, Brazil

XLIX Annual Meeting of the Brazilian Astronomical Society

Poster – SAB

How varied are stellar populations in the Solar vicinity? Exploring GCNS and GALAH DR4 with t-SNE

2026 • Natal, Brazil

Teaching, Research and Extension Congress (CONEPE)

Presentation – CONEPE

LaTeX class: optimizing the formatting of academic papers.

2026 · Campos dos Goytacazes, Brazil

Semanas Acadêmicas

VIII Knowledge Showcase and I Job Fair

Participant

2020 · Bom Jesus do Itabapoana, Brazil

IX Knowledge Showcase and II Job Fair

Participant

2021 · Bom Jesus do Itabapoana, Brazil

I Computational Engineering and Management Week

Participant

2021 · Bom Jesus do Itabapoana, Brazil

X Knowledge Showcase and III Job Fair

Speaker

Analysis of dynamic simulations of galaxy cluster mergers

2022 · Bom Jesus do Itabapoana, Brazil

II Computational Engineering and Management Week

Participant

2022 · Bom Jesus do Itabapoana, Brazil

XI Knowledge Showcase and IV Job Fair

Participant

MobFog no IFFMaker

2023 · Bom Jesus do Itabapoana, Brazil

III Computational Engineering and Management Week

Participant

MobFog no IFFMaker

2023 · Bom Jesus do Itabapoana, Brazil

XII Knowledge Showcase and V Job Fair

Participant

2024 · Bom Jesus do Itabapoana, Brazil

IV Computational Engineering and Management Week

Speaker and Organizer

2024 · Bom Jesus do Itabapoana, Brazil

PUBLICATIONS

 **Link Nasa ADS:** [NASA ADS - Pedro H. R. de Andrade](#)

Proceedings

- [1] P. H. R. de Andrade, M. L. L. Dantas, and A. C. Soja. « Stellar properties and chemical features of the Gaia Catalogue of Nearby Stars observed by GALAH DR4 ». In: *Boletim da Sociedade Astronômica Brasileira*. Vol. 37. 1. 2026, pp. 308–309.
- [2] Pedro Henrique Rocha de Andrade, Ana Cecilia Soja, and Maria Luiza Linhares Dantas. « How varied are stellar populations in the Solar vicinity? Exploring GCNS and GALAH DR4 with t-SNE ». in: *Boletim da Sociedade Astronômica Brasileira*. Natal, RN, 2026.
- [3] Pedro Henrique Rocha de Andrade, Ana Cecilia Soja, and Maria Luiza Linhares Dantas. « Propriedades estelares e características químicas do Gaia Catalogue of Nearby Stars observado pelo GALAH DR4 ». In: *Anais do XVI Congresso de Iniciação Científica e Tecnológica e X Congresso Fluminense de Pós-Graduação*. Campos dos Goytacazes, RJ: UENF, 2026.
- [4] Pedro Henrique Rocha de Andrade, Ana Cecília Soja, and Maria Luiza Linhares Dantas. « Detecção de Anomalias em Estrelas da Via Láctea: Explorando Dados do Gaia e Outros Surveys com Aprendizado de Máquina ». In: *Anais da 78ª Reunião Anual da Sociedade Brasileira para o Progresso da Ciência (SBPC)*. Niterói, RJ: UFF, 2026.
- [5] Pedro Henrique Rocha de Andrade, Ana Cecília Soja, and Maria Luiza Linhares Dantas. « Detecção de Anomalias em Estrelas da Via Láctea: Explorando Dados do Gaia e Outros Surveys com Aprendizado de Máquina ». In: *Resumos da Escola de Inverno de Astrofísica do Observatório Nacional*. Rio de Janeiro, RJ: Observatório Nacional, 2026.
- [6] Maycon Jorge Deláqua da Silva, Pedro Henrique Rocha de Andrade, and Ana Cecilia Soja. « Simulando o impacto de satélites em observações astronômicas ». In: *Anais do XVI Congresso de Iniciação Científica e Tecnológica e X Congresso Fluminense de Pós-Graduação*. Campos dos Goytacazes, RJ: UENF, 2025.
- [7] Maycon Jorge Deláqua da Silva et al. « Simulando o impacto de satélites em observações astronômicas ». In: *XVI Mostra de Ciência e Tecnologia do Instituto Ação (MCTIA)*. 2025.
- [8] Maycon Jorge Deláqua da Silva et al. « Simulando o impacto de satélites em observações astronômicas ». In: *Anais do XVI Congresso de Iniciação Científica e Tecnológica e IX Congresso Fluminense de Pós-Graduação*. Campos dos Goytacazes, RJ: UENF, 2024.
- [9] Maycon Jorge Deláqua da Silva et al. « Simulando o impacto de satélites em observações astronômicas ». In: *Anais da IX FEBIC – Feira Brasileira de Iniciação Científica*. 2024. ISBN: 978-65-991144-6-5.
- [10] Pedro Henrique Rocha de Andrade and Ana Cecília Soja. « Análise de simulações dinâmicas de aglomerados de galáxias em fusão ». In: *Anais da 21ª FEBRACE – Feira Brasileira de Ciências e Engenharia*. Vol. 21. 2023, p. 5. ISBN: 978-65-89190-18-9.
- [11] Gabriel Coelho de Souza Poubel et al. « MobFog no IFFMaker ». In: *Anais da XI Mostra do Conhecimento 2023*. 2023, p. 21.

Articles

- [12] P. H. R. de Andrade, M. L. L. Dantas, and A. C. Soja. « Stellar properties and chemical features of the Gaia Catalogue of Nearby Stars observed by GALAH DR4 ». In: *arXiv e-prints* (Dec. 2025). DOI: [10.48550/arXiv.2512.10037](#).

AWARDS



IX FEBIC

3rd Place in the Undergraduate Category with the work "Simulating the Impact of Satellites on Astronomical Observations"



XVI MCTIA

1st Place in the Undergraduate Category with the work "Simulating the Impact of Satellites on Astronomical Observations"

STATISTICS



3 Oral Presentations

National Events



7 Posters

National Events



9 Science Fairs/Congresses

National Events



10 Academic Weeks

Regional Events



PROGRAMMING



Python



Git



Github



TeX



C++



Java



NodeJS

LANGUAGES

Portuguese



English



French



Spanish

