

Alvaro Franco Martins

Data Scientist

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 Maringá/PR

EDUCATION

PhD in Physics 2021 – 2023
State University of Maringá

- Performed predictive tasks (regression, classification and clustering) in criminal networks.
- These tasks included prediction and classification of vertices and edges.
- Applied algorithms such as k -nearest neighbors and logistic regression, in addition to a deep learning approach.

MSc in Physics 2018 – 2021
State University of Maringá

- Performed statistical analysis concerning dynamical and structural aspects of political corruption networks.
- Discovered that political corruption networks share universal properties.
- Developed a computational model to simulate these networks.

BSc in Physics 2014 – 2018
State University of Maringá

- Applied a new parameter to analyze time series from several sources.
- Used this approach to find periodic behaviors in noisy signals.

EXPERIENCE

Data analysis and statistics consultant 2021 – 2023
Toxicological Information and Assistance Center (CIATox)

- Performed descriptive statistical analysis and hypothesis testing.
- Investigated patterns and trends in the data.
- Created graphs and charts to describe and interpret the results.
- Offered support to researchers related to statistical analysis techniques.

PUBLICATIONS

- 2018 [The dynamical structure of political corruption networks](#). Oxford Academic (115 citations).
- 2022 [Universality of political corruption networks](#). Nature (9 citations).
- 2022 [Machine learning partners in criminal networks](#). Nature (7 citations).
- 2023 [Deep learning criminal networks](#). Chaos, Solitons & Fractals. (2 citations).

SKILLS

- Python (7+ years of experience).
- Pandas. Numpy. Matplotlib. Scipy. Scikit-Learn.
- Data Visualization.
- Jupyter Notebook.
- Data Science.
- Mathematics.
- Statistics.
- MySQL.
- Linux.

SOFT SKILLS

- Creativity.
- Communication.
- Analytical Thinking.

LANGUAGES

- Portuguese.
- English.