Vítor Fróis

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With a passion for simple solutions, I am a computer scientist who seeks to shorten the gap between theory and application. From constructing data pipelines to analyzing complex networks, I've honed the skills to tackle creative problems and uncover valuable insights.

Education

Universidade de São Paulo — São Carlos, SP
Bachelor degree in Computer Science — *Jan. 2021 – Present*

Centro Federal de Educação Tecnológica — Araxá, MG
Technical degree in Electronics — *Jan. 2018 – Dez 2020*

Experience

Content Engineer — Mar 2025 – Present
Briefer — *Remote*
- Writing high-level data science posts about machine learning models, data exploration and data cleaning

Complex Systems Research Assistant - FAPESP — June 2024 – Mar 2025
Prof. Francisco Rodrigues' group — *São Carlos, SP*
- Implemented an optimized Sznajd model simulation in networks using Numba to recriate social dynamics
- Studied the mean-field approximation analytical approach to understand social dynamics on networks
- Used Pandas, Seaborn and Scikit-Learn to explore simulation data and train a explainable high accuracy model

Data Engineering Intern — Dez. 2022 – Sep 2023
Clave Capital — *São Paulo, SP*
- Created scripts to scrape and get financial data from numerous sources using Pandas and Selenium
- Worked with economists to project reports with direct information and display useful graphs
- Automated the creation of daily internal risk reports using PostgreSQL, SQLAlchemy and Python

Complex Networks Research Assistant — Aug 2022 – Aug 2023
Prof. Diego Amâncio's group — *São Carlos, SP*
- Explored methods to characterize networks through centrality, transitivity and heterogeinity measures
- Used unsupervised learning techniques to perform clustering of random and real-world networks

Projects

DATA ICMC | *Coordinator at Machine Learning & Data Science Extracurricular* — July 2023 – Dez 2024
- Worked in a small team to restructure the group organization and promote talks, study groups and projects
- Presented in many study group seminars such as Transfer Learning, Diffusion and Support Vector Machines

Mesa Project | *Open Source, Python, Agent Based Modeling, Pytest, Github Actions* — Mar 2024 – Sep 2024
- Implemented experimental functionalities based on Voronoi diagrams and visualization using Matplotlib
- Wrote physics inspired examples about epidemic spreading and ferromagnet model examples for the library

Trilha das Árvores | *Node.js, React Native, Flask, PostgreSQL, Github Actions* — Fev 2024 – Jun 2024
- Projected an application to close the gap between the University ESALQ Campus and Piracicaba residents through the practice of trail running
- Implemented a Strava-like mobile application using React Native with compass, maps and timer features

Technical Skills

Libraries: Scikit-Learn, Pandas, NumPy, Seaborn, Keras, Aeon, Optuna, PyTorch, Matplotlib, Selenium
Languages: Portuguese (Native), English (Advanced), Spanish (Basic)
Programming Languages: Python, SQL (Postgres and SQLite), C/C++, JavaScript, HTML/CSS
Developer Tools: Linux, Terminal, Git, Docker, VS Code, VIM, PyCharm, IntelliJ

Achievements

Candidate Master by the International Chess Federation
National Master by the Brazilian Chess Federation
Astronomy and Robotics National Olympiads medallist