

# Bruno Mariz O. Teixeira

## Software Engineer

Rua Professor Mello Moraes, 2231 - Butantã, São Paulo - SP, 05587-070

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### Skills

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Python · FastAPI · TypeScript · Next.js · Git · Docker/Singularity · PostgreSQL · Linux · Java · C · C++ · AWS · Ansible · Proxmox · SLURM · FreeIPA (LDAP) · Lmod · Spack · OpenVPN

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### Experience

#### Fluids & Dynamics Research Group / software engineer and systems analyst

JAN 2024 - present, Rua Professor Mello Moraes, 2231

The Fluids & Dynamics Research Group is a research laboratory in the Mechanical Engineering department at the Polytechnic School of the University of São Paulo, specializing, but not limited to, projects involving fluid mechanics and dynamic systems. The main activities carried out during this period were:

- Development of parallel and distributed code for seismic imaging applications. Skills developed: MPI, Devito, Python, C, C++, Docker/Singularity/Apptainer
- Management of a high-performance cluster aimed at scientific research. Skills developed: Distributed and parallel computing, SLURM, LDAP, Singularity, Lmod
- Administration of infrastructure and network services. Skills developed: Computer networks, Proxmox, Ansible, OpenVPN, LDAP

Company website: <https://sites.usp.br/rcgi/br/home/>, <https://ndf.poli.usp.br>

#### Semantix Inc / software engineering intern

DEC 2021 - JUL 2023, Av. Eusébio Matoso, 1375

Semantix is a technology company focused on data engineering. The internship was carried out in the company's financial market oriented branch, called Semantix Financial. Some achievements from this period include:

- Creation of an online dashboard containing financial information to help investors make decisions. Skills developed: code review, application deployment on AWS, Docker, web scraping.
- Development of endpoints, validation schemes, and functionalities for a barter platform, integrating backend and database; Creation of screens and changes to components in the frontend, correction of errors, integration of the front and backend of the platform. Skills developed: Chalice (Python microframework for AWS serverless applications), SQLAlchemy, Docker, PostgreSQL, Postman and pytest automated tests; React, TypeScript.

Company website: <https://semantix.ai/>

#### KNOMA - Knowledge Engineering Lab / undergraduate researcher

MAY 2019 - AUG 2020, Av. Prof. Luciano Gualberto, 380

During the research period at the KNOMA laboratory, the work was directed to a project that aims to accelerate the process of prospecting for oil and gas underground using parallel processing. Among the challenges of this period, the following stand out:

- Visualization of wave propagation in acoustic media. Skills developed: Python, Finite

Difference Method.

- Scalability analysis in parallel processing of different models for simulating wave propagation. Skills developed: Parallel programming, Python, Shell script, Linux, Docker.

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## Education

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**Escola Politécnica da Universidade de São Paulo (POLI-USP) / Bachelor's Degree:**  
Electrical Engineering - Emphasis on Computer Engineering

JAN 2019 - DEC 2023, Av. Prof. Luciano Gualberto, 380

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## Awards

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Best undergraduate research article for the work “Comparison of Computational Cost between Different Sizes of Absorption Layers”, presented orally at the Scientific Initiation Forum of the 11th High Performance Regional School of São Paulo (ERAD-SP).

Event website: <https://eradsp2020.ncc.unesp.br/premiados>