

Nilton Aguiar dos Santos

Computer Engineer

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 Portfolio

EDUCATION

• Bachelor's in Computer Engineering

2020-25

Federal University of Mato Grosso, Brazil

PERSONAL PROJECTS

• RADARE - Reconciliation and Data Analysis in a Responsive Environment

Web application based on React for data reconciliation.

- Industrial data reconciliation using multivariable function minimization by the Lagrange multiplier method.
- Capable of reconciling large-scale data (millions of records), both in real-time and *batches*, identifying and correcting errors through reconciliation and adjusting variables to their correct values.
- Client built with **TypeScript** and **React** for better responsiveness, using the **ReactFlow** library for interaction with nodes.
- Server developed with API *endpoints*, facilitating integration with other tools and systems.
- Highly scalable and robust database, implemented with **PostgreSQL** and **TimescaleDB** for efficient time series data storage.
- Technologies Used: Python (Flask), TypeScript (React), PostgreSQL (TimescaleDB).

• AAICAP - Artificial Intelligence Correction and Augmentation Pipeline

Python-based project for correcting pixel-art images generated by Artificial Intelligence.

- Uses image processing techniques to correct flaws in pixel-art images.
- Capable of optimizing image quality while preserving relevant characteristics, dynamically adjusting processing parameters.
- Correction and enhancement pipeline designed for efficient large-scale image processing, with support for automation and API.
- Technologies Used: Python, Flask, OpenCV, PIL.

EXPERIENCE

• Back-end Development Intern

May 2021 - May 2022

SEMA-MT

On-site

- Contributed to the development of a field tool using **C#** and **.NET**, designed to collect and manage data in remote environments.
- Implemented database synchronization functionality, ensuring data consistency both in online and offline modes.
- Developed and optimized offline functionality, allowing users to continue using the tool without connectivity, with automatic synchronization upon reconnection.
- Collaborated with the team on integrating the tool with internal and external systems via robust APIs.
- **Technologies Used:** C#, .NET, SQL Server, RESTful APIs.

• Junior Full Stack Developer

May 2024 - Present

PGE-MT

On-site

- Implemented automations using **Google Apps Script** and **AppSheet**, optimizing internal workflows.
- Developed systems for managing legal processes and controlling schedules for prosecutors, using **TypeScript** and **React** for the front-end, **PostgreSQL** for the database, and deployed on **Firebase** with authentication via **Google Authentication**.
- Integrated **ChatGPT** for automatic process summaries and pre-assessment of litispence, using **Node.js** and the **ChatGPT API**.
- **Technologies Used:** TypeScript, React, PostgreSQL, Firebase, Node.js, Google Apps Script, AppSheet, ChatGPT API.

TECHNICAL SKILLS AND INTERESTS

Languages: Portuguese (native), English (fluent), Spanish (intermediate), French (beginner), and German (beginner).

Programming Languages: C/C++, Rust, Python, and TypeScript.

Libraries: NumPy, Pandas, ReactJS, and Redux.

Tools: Node.js, Git, GitHub, Gitlab, AppScript, and AppSheet.

Frameworks: ReactJS, Flask, Express.js, and FastAPI.

Cloud/Databases: Firebase, PostgreSQL, and TimescaleDB.