

Gaio Santos

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Education

University of Toronto

Sep 2022 – Present

BASc Computer Engineering – Minors in Artificial Intelligence and Business

Toronto, ON

- U of T Engineering International Scholar Award with a value of **\$100,000** – (2022)
- Courses: Algorithms and Data Structures, Operating Systems, Software Communication and Design, Programming Fundamentals, Computer Architecture, Probability and Applications, Digital Systems, Linear Algebra, Calculus

Work Experience

BTG Pactual

May 2024 – Aug 2024

IT Analyst

Sao Paulo, Brazil

- Developed **10+** dynamic pages and components in a **micro-frontend** architecture using **TypeScript** and **React**, enhancing the Wealth Management platform's **UX** and enabling bankers to create custom templates.
- Designed dynamic tables and graphs using the **Syncfusion library** and **RESTful APIs** to visualize key portfolio metrics such as asset classification and capital distribution, contributing to an **80%** increase in users from 2023 to 2024
- Architected a global notification system leveraging **React Context API** and **Flux architecture** to enforce multi-component validations, ensuring all steps are completed before allowing user progression, reducing workflow interruptions by **65%**.

ABIX Tecnologia LTDA

May 2023 – Aug 2023

Software Engineering Intern

Remote

- Developed reusable frontend components with **JavaScript** and **Next.js** for an internal platform, enabling efficient tracking of contracts, warehouse inventory, rentals, sales, and equipment IDs.
- Integrated real-time data display in lists and graphs through **HTTP requests** using **Ky**, optimizing API call retries and error handling, enhancing usability for employees.
- Tested API endpoints with **Postman** to ensure proper functionality and data flow, and **GitLab** for managing merge requests, code reviews, and **CI/CD pipelines**, ensuring smooth collaboration and improving system reliability.

Projects

NaviWeather GIS | C++

- Developed a GIS application in **C++** that visualizes key data on major cities, enhancing city-specific data accessibility and user experience.
- Designed and implemented an **A*** search algorithm to optimize navigation routes, achieving an **82%** improvement in efficiency over traditional **Dijkstra's algorithm**
- Integrated the **OpenWeatherAPI** to provide real-time weather updates within city zones, maintaining a rapid response time of **251 ms** for improved user interactivity.
- Integrated the **OpenStreetMap API** to retrieve real-world geospatial data, including city layouts, streets, and natural features, enhancing the accuracy and detail of GIS visualizations.

Parkour Game | C

- Designed and developed a competitive 2-player game in **C** on an **FPGA** using a DE1-SoC board with VGA display, featuring split-screen gameplay and collision detection algorithms.
- Implemented double buffering for smooth frame transitions on VGA, optimizing performance for lag-free gameplay.
- Enabled player controls through PS/2 inputs (arrow keys and WASD) with interrupt handling, ensuring seamless real-time input response.
- Integrated dynamic audio and image arrays that respond to player actions, enhancing the overall gaming experience.

Technical Skills

Languages/Frameworks: TypeScript, JavaScript, Python, C, C++, Assembly, Verilog RTL

Web: React.js, Next.js, Flask, HTML, CSS, TailwindCSS, Docker, MySQL, AWS, RESTful APIs

Software Tools: Git, GitLab, Postman, Azure DevOps Services, Jira, Quartus, Linux, MATLAB