

# Gustavo A. Moraes

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## Skills

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Python, C#, .NET, JavaScript, PHP, C/C++, Java, Docker, Nginx, Node.js, Go, TypeScript, React, Svelte, SQL, HTML, CSS, Game Development, Unity, Embedded Systems, English (Fluent)

## Summary

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Full-stack developer with 3 years of experience delivering production features end-to-end on a SaaS platform serving 1,200+ content creators and their audiences. Hands-on projects in Python, C#, and C++.

## Professional Experience

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**Full-Stack Web Developer**, Astron Members – Caxias do Sul Mar 2023 – Present

- Engineered a full assessment platform, used by **thousands** of students monthly, by implementing an end-to-end PHP solution with creation, scheduling, delivery, and grading, for educators and administrators alike.
- Integrated **10+** payment providers (Stripe, PayPal, Mercado Pago, PagSeguro) using webhooks to securely and efficiently handle thousands of successful transactions and **R\$200k+** in monthly volume.
- Developed core backend logic and designed responsive and high-converting front-end templates for a landing page builder made for digital content creators, enabling **300+** landing pages to be created and launched.
- Engineered an embeddable widget for landing pages that showcases real-time course curriculum, boosting buyer confidence and conversions by dynamically pulling up-to-date content from the platform.
- Developed a dedicated community forum connecting students and creators, significantly boosting interaction and platform retention by facilitating direct Q&A, threaded discussions, and collaborative knowledge sharing.

## Personal Projects

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**CPU Cache Simulator (Python)** GitHub

- Designed and benchmarked a configurable Python CPU cache simulator, improving measured performance from 54.0% to 99.9% hit rate and 37.6ns to 10.05ns average access time across traces of 51,200 operations.

**3D Game Engine (C++/OpenGL)** GitHub

- Developed a Minecraft-style voxel engine featuring infinite procedural terrain and first-person navigation.
- Improved rendering performance with a multithreaded data pipeline to handle asynchronous chunk generation and hidden-face culling, reducing rendered geometry by up to **≈40x** for a smooth real-time navigation.

**Nixie Clock with Embedded System (C/C++)** GitHub

- Engineered the firmware and hardware for an IoT-enabled Nixie clock, featuring a responsive web dashboard for remote and persistent hardware configuration in real-time, served directly from the device.

**Snake on Desktop Icons (C#/Win32 API)** GitHub

- Built a C# WinForms desktop game that transforms Windows desktop icons into a live Snake board by reading/moving coordinates positions through Win32 API calls and restoring the user's layout on exit.

**Personal Infrastructure (Docker/Nginx)**

- Set up an Oracle Cloud VPS running as proxy server, routing public IPv4 traffic to a home server over IPv6. The local server uses Docker for container management and Nginx to serve applications and SSL certificates.

## Education

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**University of Caxias do Sul (Brazil)**, B.Sc. in Computer Science Mar 2023 – Dec 2026

- **Relevant coursework:** Object-Oriented Programming (Java); Algorithms and Data Structures; Databases; Computer Networks; Concurrent, Parallel, and Distributed Programming; Operating Systems Fundamentals