

ARTHUR GONZE MACHADO

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· EDUCATION ·

Master of Computer Science, Universidade Federal de Juiz de Fora Present

- Area of research: Computer Graphics - Computational Fluid Dynamics
- [A particle-in-cell method for anisotropic fluid simulation](#) - Computers & Graphics Journal
- Student representative 2021-2022

Bachelor of Computer Science, Universidade Federal de Juiz de Fora Mar 2021

- [Generation of anisotropic tensor fields for Helmholtz projection through Simulated Annealing](#)

· SKILLS ·

Languages	C/C++, C#, Python, Javascript
Frameworks and Libraries	OpenGL, WebGL, ThreeJS, Git, Steamworks
Engines and IDEs	Unity, Unreal, Blender, Houdini, Visual Studio, CLion
Technical Skills	Computational Fluid Dynamics, Machine Learning, Web VR and AR, Programming Patterns, Agile Methodologies, Object-Oriented Programming(OOP), Data Structures
Soft Skills	Passion for video games, Time Management, Teamwork, Problem Solving, Accountability

· PROJECTS ·

Plunderer's Adventures - from Jan 2021 to Apr 2021 - C#, Unity [Nintendo Switch](#)

- Developed some of the mechanics of this genre: 2D cinematic, enemy horde spawning, HUB, upgrades, spawnable items, stage selection, diverse enemies behaviors, playable heroes, heroes skills, hero progression, and item progression.
- Integrated with Game Analytics.

VR and AR for Web Application - from May 2021 to Aug 2021 - Javascript, Threejs, WebXR [GitHub](#)

- Experimented with VR and AR for Web and mobile systems.
- Studied GLSL to implement the visual behavior of ocean water in VR.
- Optimized for web and mobile systems.
- Implemented a museum in VR with some heavy 3D models.
- Utilized markers to plot 3D models in AR.

ILF - Intergalactic Lost and Found - 48 hours on Feb 2021 - C#, Unity [Global Game Jam](#)

- A three-day project done for the 2021 Global Game Jam by a group of college friends.
- Implemented UI item select system, and inventory.

3D Isometric RPG Core Mechanics - from Mar 2022 to May 2022 - C#, Unity [GitHub](#)

- Reproduced the core mechanics of this genre like saving system, item drop and equip, varied weapons and effects, 3D movement and animations, cinematic, and combat system.
- Experimented with AI algorithms, Shader Graph, Cinemachine, environment creation, etc.

- A university project that was done in association with the Chemistry department, to use games as a tool for education.
- Implemented a puzzle, quest, and dialogue system.

· WORK HISTORY ·

Indie Game Developer - Freelancer

Dec 2020 - Present

- Published games in Steam, Itch.io, and one on Nintendo Switch using Unity.
- I assumed several roles in the development of projects and not just programming. Examples of systems in which I had direct participation were scenario building, UI, animation, integration and handling of assets, and development of tools to assist the designer's work in the engine.
- All projects were developed remotely using agile methodologies and task and time management tools.

· CERTIFICATION ·

[Unreal Engine 5 C++ Developer: Learn C++ & Make Video Games](#)

Jan 2023

[RPG Core Combat Creator: Learn Intermediate Unity C# Coding](#)

May 2022

[Artificial Neural Networks with Python](#)

Aug 2021

[Blender and Other Tools for Game Development](#)

May 2018

· HONORS & AWARDS ·

Master's Scholarship

Mar 2021 to Mar 2023

- Funded by: Research Support Foundation of the State of Minas Gerais (FAPEMIG)
- Institution: Universidade Federal de Juiz de Fora
- Awarded for being the first of my class in the Computer Graphics research field selection process. That process included background analysis, academic performance, interviews, recommendation letters, and research project analysis.

Research Apprenticeship Scholarship

Mar 2020 to Feb 2021

- Funded by: National Council for Scientific and Technological Development (CNPq)
- Institution: The National Laboratory for Scientific Computing (LNCC)
- Research: Simulation of Fluids Driven by Tensor Fields for Animation
- Awarded after my background analysis, academic performance, and interviews.

Class Monitor Scholarship

Jan 2019 to Dec 2019

- Institution: Universidade Federal de Juiz de Fora
- Class: Advanced Data Structures
- Awarded after my academic performance, interview, and technical test.

Research Apprenticeship Scholarship

Aug 2017 to Jul 2018

- Institution: Universidade Federal de Juiz de Fora
- Research: Computing Applied to Game Design
- Awarded after my academic performance and an interview.

· ADDITIONAL INFORMATION ·

Languages: Portuguese(native), English(B2)

Personal Interests: Games, books(sci-fi, fantasy, non-fiction), music, animations, movies, and studying languages