Daniel Martí Casanova

Software Developer

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Portfolio: damacaa.github.io

SKILLS

- C++, C#, Python, Unity, Unreal Engine (Blueprints and C++), Git, OpenGL, Design Patterns
- Agile Methodologies, Jira, SCRUM, UML, Trello
- Proficient in English (C1 Advanced), Native Spanish and Catalan

EXPERIENCE

SNGULAR Studios, Remote - Junior Software Developer | Real Time Programmer

2023 - PRESENT

- Specialized in developing real-time interactive applications using Unreal Engine and Unity, with a focus on museum installations and educational experiences.
- Collaborated closely with designers, ensuring the feasibility of their designs and providing technical guidance.
- Delivered significant contributions to internal tools and museum interactives, creating reusable solutions for future projects.
- **Real Madrid Museum in Madrid:** developed a large-scale interactive experience, involving 22 interconnected computers displaying continuous video and information on 88 screens.
  - Designed and implemented the UI according to art team specifications.
  - Created a custom video playback and synchronization solution, including an Unreal Engine plugin and a standalone C# server application.
- **Abu Dhabi's Department of Finance:** contributed to a computer vision project using a RealSense depth camera for gesture-based interaction for an Unreal Engine interactive experience.
  - Refactored and improved an existing C++ application to modularize code, maintain legacy functionality, and add hand tracking capabilities.
  - Developed an Unreal Engine plugin to handle communication via sockets and implement gesture recognition.

Rey Juan Carlos University, Madrid - Physics Research Assistant

2021 - 2022

- Worked on a state of the art machine learning project using Python, C++ and the Unity game engine.
- Developed an efficient differentiable physics simulation engine in C++.

Personal projects

Collaborated with teams on various academic projects and personal projects. Competed in multiple game jams, where I consistently delivered high-quality projects within deadlines.

- *Weird Engine*: a custom C++ game engine that I use to learn more about low level optimizations and performance, computer graphics and physics simulation. Available on my GitHub.
  - I developed my own ECS system following a data-oriented approach.
  - I built a custom physics engine leveraging my previous experience in physics simulation
  - I implemented a unique rendering solution with OpenGL that employs unorthodox rendering techniques to archive distinctive graphics.
- *We're In The Same Boat*: a puzzle game for Android built with Unity and available in the Play Store. I implemented most of the gameplay logic, as well as an AI-powered clue system.

EDUCATION

Rey Juan Carlos University, Madrid - Bachelor's Degree in Video Game design and development

2018 - 2022

Obtained multiple distinctions in subjects about OOP in C++ and Javascript, 3D physics simulation, and multiplayer web games using Javascript and Java for backend.

- *"Premio extraordinario de fin de carrera"*: award for the highest GPA among the graduates in the class of 2023.
- Thesis: Framework for inverse animation editing based on differentiable simulation.