Mattias FUSTER

Engine Programmer

Passionate about technological innovation in engine development, I integrate modern technologies while ensuring code consistency and performance optimization. My knowledge and skills, strengthened by a diverse background in programming and software support, enable me to design innovative and high-performance solutions that bring real added value to projects.

▶ Work Experiences

Post-Launch Support (Unity)

March 2024
June 2024

Collision Studio, Espagne (remote)

Provided support for *Terra Alia: The Language Discovery RPG* (Unity), including major bug fixes for the release of a critical update, such as:

- Resolved a deadlock in the dialogue system caused by a race condition occurring during concurrent coroutine execution.

AI & Tool Programmer (Unreal Engine)

September 2023
December 2023

Mistral Studio (PVA Medias), Avignon (remote)

Developed a prototype in Unreal Engine generating NPCs through various AI models, including storylines, personalities, and unique features, while managing rule-based interactions.

- Phase one R&D: explored AI, machine learning, LLMs, fine-tuning, etc.
- Phase two: selected models for personality translation, dialogue generation, speech synthesis, etc.
- Phase three: created the tool for Unreal Engine 5.

IT Apprentice

September 2020
June 2022

A.T.I.R, Avignon

Provided user support and maintenance for ATIR, including the development of a billing website.

▶ Education

Master's Degree in Game Development - Graduated top of the class

September 2022
June 2025

Game Academy - Avignon

HND in Computer Science – Software Development

September 2020
June 2022

Lycée Théodore Aubanel - Avignon (France)

French Baccalauréat in Science, Engineering Sciences Specialization

September 2016
June 2019

Lycée Jean-Henry Fabre - Carpentras (France)

+33 (0)6 28 77 80 45
fuster.mattias@gmail.com
Avignon, France
20/02/2001
Full Driving Licence (B)
www.mattiasfuster.com
linkedin.com/in/mattias-fuster

Skills :

Soft Skills :

- Autonomy
- Curiosity
- Team spirit
- Leadership
- Creativity
- Initiative

Hard Skills :

- C - C++ - C#
- Unreal Engine - Unity - SFML
- Vulkan
- HTML/CSS/JS - PHP - SQL
- Python
- Git/GitHub - CMake - Doxygen

Languages :

French (native speaker)

English (intermediate)

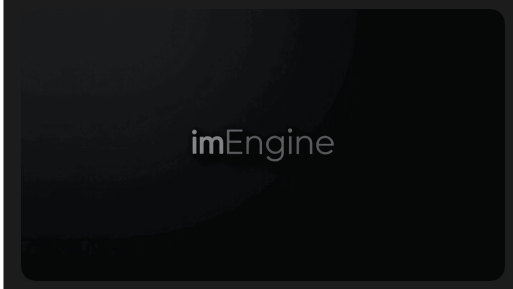
Spanish (beginner)

▶ Projects

ImEngine

Personal Project – github.com/mattiasfuster/ImEngine –
ImEngine is a minimalist game engine in C++/ImGui currently under development. It follows a modular Engine/Editor architecture, using Vulkan for high-performance rendering and aiming to enable game creation.
Work completed:
- Project setup with CMake, using the LLVM toolchain:
  - Clang as the compiler
  - LLD as the linker
- Vulkan integration for the graphics API
- GLFW for window management
- ImGui integration for the Editor
- Implementation of several custom allocators, such as:
  - Linear Allocator
  - Pool Allocator

Next steps:
- Add an event system (Signal-Slot and/or EventBus)
- Implement a Worker system with Jobs (ref. Fiber)



Wild-31

Student Project – mattiasfuster.com/portfolio-wild-31.html –
Wild-31 is a 3D beat 'em up developed with Unreal Engine 5.5. As the final project at Game Academy, I notably contributed by:
- Designing the game architecture (entities, class hierarchy, etc.)
- Developing tools: animation collider management, editor tool for linking actions to callbacks
- Developing final boss AI (Behavior Trees, Tasks, animations, etc.)

Freak Squad

Student Project – mattiasfuster.com/portfolio-freak-squad.html –
Freak Squad is a 2D side-scrolling beat 'em up with a local cooperative mode for two players. Powered by the Coffee Engine (our custom layer built on top of SFML) feature creation and implementation were made smoother and easier to maintain.
During this project, I:
- Maintained, fixed, and improved the Coffee Engine
- Implemented destructible objects and power-ups

Coffee Engine

Student Project – mattiasfuster.com/portfolio-coffee-engine.html –
The Coffee Engine is a custom abstraction layer developed on top of SFML, handling resources, assets, scenes, game objects, and more.
I contributed to several critical parts of this project:
- Designed the architecture of the Coffee Engine (game objects and components, scene management, resource handling, etc.)
- Created a roadmap and a Notion page for documentation
- Developed a multithreaded Resource Manager using smart pointers