

Miquel Prieto Moliné

GRAPHICS & ENGINE PROGRAMMER



Friendly Computers Scientist geek with passion for the programming, gaming and machine learning world!

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Education

MASTER IN AAA VIDEOGAME PROGRAMMING

UPC School of Professional & Executive Development

September 2022 - November 2023

B.S. IN COMPUTER SCIENCE

Universitat Politècnica de Catalunya
September 2014 - June 2022

3D DESIGN AND PRINTING - JEDI ACADEMY

Universitat Politècnica de Catalunya
February 2017 - February 2017



Programming Languages

- C++
- C
- Java
- C#
- GLSL
- Python

Tools & Libraries

- Nvidia Nsight
- Unity
- Maya
- git
- SDL
- Assimp
- RenderDoc
- Optick profiler
- Blender
- OpenGL
- ImGui
- DirectXTex



Soft Skills

- Communication
- Quick Learning
- Hard Work
- Problem Solving
- Decision Making
- Time Management
- Leadership



Languages

- English fluent
- Catalan native
- Spanish native

Projects

AAA Game Engine & Game | [Axolotl Engine](#) - [Starfall Rebellion](#) (Master's project)

Lead graphics programmer and **engine programmer** for an **in-house game engine** and a **game** developed with it (using **C++** and **OpenGL**).

My responsibilities included **managing** the graphics team and **over-seeing** feature development, as well as **programming**. Some notable developments of mine include:

- **Directional** and **local lighting**, with **light culling** for both local and area lights.
- **Cook-Torrance BRDF** reflective model for materials.
- **Shadow mapping** using techniques such as **CSM**, **VSM** and **SDSM**.
- **Geometry batching** for efficient rendering,
- The whole **particle system** and the **animations system**.
- **Deferred** rendering + **forward pass** with **light pass**
- **Space Screen Ambient Occlusion**
- **Vertex, fragment, geometry** and **compute shaders** development for all the previous features and more.
- Providing the **base implementation of the engine** with basic functionalities.
- Also helped in other areas such as **UI**, **level design** and **physics**.

Check my [portfolio](#) for more info about this and other projects!

[Diagnostic Imaging for Tracheobronchomalacia patients](#) (Bachelor's thesis)

Image processing tool implemented in **Matlab** that combines existing segmentation algorithms with custom ones to estimate airway aperture for individuals suffering from tracheobronchomalacia.

Developed in **collaboration** and for **use** at Barcelona's **Germans Trias i Pujol hospital**.

Employment History

Full Stack Developer, Data analyst Consultant & Systems administrator | July 2018 - Now

MINSAIT BY INDRA - BARCELONA

- Developed and maintained internal applications for CaixaBank using Oracle APEX, PL/SQL, and Oracle Data Modeler, collaborating **directly with client** in both **team** and **solo** settings.
- Led the successful migration of a file transfer system from XCOM to Sterling Connect Direct through kshell and bash scripting.
- Managed and updated a customized internal Wiki for Indra on a Linux Red Hat platform.

Interests

- Graphics/Render programmer
- Engine/Tools programmer
- Gameplay programmer
- Machine learning appliance