

# Daniel Camba

SOFTWARE ENGINEER

C++ | Real Time Systems / Computer Graphics | Procedural Art

## PROFESSIONAL EXPERIENCE

### 3D Graphics Engineer *2020 - Present* Skandal Technologies (Startup)

- Leading the development of an in-house render engine from scratch with C++ in raw OpenGL, from geometry loading and optimization to shadow-mapping based on the designer's needs for architecture visualization, later migrated to Vulkan.
- Integrated external data sources like weather, occupancy levels, and real-time sports scores, consuming APIs from C++ with custom wrapper over Qt abstractions of network and Json.
- Creation of procedural content, from simple patterns to (2D) fluid simulation and movement detection (optical flow) using compute shaders.
- Optimized data for network transmission over NDI protocol for video input and output.
- Developed a license system our software using crypto libs and AWS Lambdas to validate the user.
- Tailored python scripts for deployment system, excel re-sorting (using Pandas), and dev-environment setup.
- Reinforced download page security using Google ReCAPTCHA for bots' avoidance.

### R&D Engineer *2018 - 2019*

#### Bioengineering and Telemedicine Group of the UPM

- Enhanced legacy C++ projects by fixing memory leaks, resolving minor bugs, and implementing multi-threading with for improved performance.
- Contributed as a co-developer to a Unity-based 3D training environment for minimally invasive surgery tasks, enabling creation, editing, and simulation.
- Developed a web app to enhance surgeons' evaluation of students, facilitating metric's interpretation.

### Backend Engineer *January - April of 2017*

#### Profocus Studio - Internship

- Revamped the entire product reception to invoicing workflow, trimming down week-long tasks to just two days. Resulted in major time and resource savings.

## PERSONAL INFO

Madrid, Spain

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<https://bybretema.com>

## EDUCATION

- **MSc in Computer Graphics**  
URJC University (Spain)  
2017 - 2019
- **BSc in Computer Science**  
Vigo University (Spain)  
2012 - 2017

## LANGUAGES

- **Spanish:** Native
- **English:** Professional

## RELEVANT SKILLS

- C++
- Qt
- OpenGL
- Vulkan
- Python Scripting
- Notion
- Game Dev (Unity)
- Multiplatform development (Widows / MacOS / Linux)

## RELEVANT SIDE PROJECTS

- **Interactive Motion Graphic**  
MSc Thesis about procedural animations implemented from scratch with OpenGL + BVH motion capture files.  
[github.com/byBretema/imog](https://github.com/byBretema/imog)