

MARTIN GARCIA, POL

Informatics Engineering

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EXPERIENCE

Research Intern - UPC - HP Inc.

High-Resolution 3D Printing

📅 April 2019 – Present 📍 Barcelona, Spain

- Research and development of algorithmic solutions for state-of-the-art high-resolution 3D printing for HP Inc.
- Working on high performant geometry processing, data structures and rasterization algorithms.
- Delivered crucial enhancements to beam lattices and displacement maps implementations for both memory and performance feasibility.
- Designed novel volumetric textures integration in 3D printing, for the 3MF volumetric extension.

ACHIEVEMENTS

- Award to the best informatics engineering bachelor final thesis 2019-2020, by FIB Alumni. Thesis graded with honours.
- Co-inventor of 2 different patent applications (still to be resolved by the US patents office).

SKILLS

“Hard” skills

- *Well-versed*: Computer Graphics • Geometry Processing • Linear Algebra
- *Versed*: Computer Vision • Logic • Computational Physics • GPGPU programming • Deep Learning

Programming Languages

- *Proficient*: C++ • C
- *Familiar*: MATLAB • Java • Python • CUDA

APIs

- *Proficient*: C++ Standard Library
- *Familiar*: OpenGL • Vulkan • Android • OpenMP

Languages

- *Spanish* - Native
- *Catalan* - Native
- *English* - Professional working proficiency

PERSONAL SKILLS

- Strong drive for self-improvement, to learn and grow professionally.
- Organized and methodic at individual or collaborative work.
- Good communication and teamwork aptitudes.
- Used and confident working under pressure.
- Initiative to participate and solve problems.

EDUCATION

MS in Innovation and Research in Informatics

Technical University of Catalonia

📅 2020 – Present

BS in Informatics Engineering

Technical University of Catalonia

📅 2016 – 2020

Baccalaureate Diploma in Technology

Salesians SVH

📅 2014 – 2016

PROJECTS

Simulator of deformable materials with MPM

Bachelor thesis

🔗 github.com/SirKoto/MPMSimulator

- Research and development of a simulator for deformable, elastic and plastic objects, using the Material Point Method. With explicit integration. CPU and GPU implementation.
- Implementation in C++, using OpenGL for the viewer and CUDA for the GPGPU part.
- Wrote an introductory document to simulation using hybrid representations (both Eulerian and Lagrangian) from the point of view of a Computer Scientist (document available in Catalan).

Vulkan Configurable Real-Time Renderer

🔗 github.com/SirKoto/graphRenderer

- C++ renderer, configurable through GUI that reveals Vulkan API abstraction.
- Graph-based configurable pipelines, materials, passes...
- Fiber-based job system.
- Project still on progress.

Android UPC App

🔗 github.com/SirKoto/Raco_Android

- Android application using the Barcelona School of Informatics (FIB) intranet API, developed for personal use.