MARTIN GARCIA, POL

Informatics Engineering | Computer graphics

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EXPERIENCE

Robotics Engineer Traineeship ● Mujin
SKU palletizing

📅 January 2023 – August 2023   📍 Tokyo, Japan

- Tasked with creating new tests, debugging and adding new functionalities to the robotic planning pipeline.
- Designed and implemented interactive visualization tools to help analyze and debug the palletization algorithms and their parameters.

Research and Development ● UPC - HP Inc.
High-Resolution 3D Printing

📅 April 2019 – July 2022   📍 Barcelona, Spain

- Delivered crucial enhancements to multiple time-critical components, including the whole slicing pipeline with speedups up to x2.5, for memory and performance feasibility.
- I designed novel integrations for volumetric models and constructive solid geometry in 3D printing for the 3MF volumetric extension.

ACHIEVEMENTS

- Vulcanus in Japan 2022/2023 participant. An EU-organized program consisting of four months of an intensive language course and an eight months internship at a company in Japan.
- Best academic record of promotion 2021/2022 "Master in Innovation and Research in Informatics".
- Award to best Spanish Computer Graphics bachelor final thesis 2019-2021, by the Spanish Congress of Computer Graphics (CEIG), and to the best informatics engineering bachelor final thesis 2019-2020 of the faculty, by FIB Alumni.

PROJECTS

To check out my personal projects, I highly encourage you to look at my webpage or my GitHub profile:

 sirkoto.github.io/   github.com/SirKoto

Here are some remarkable projects:

Simulator of deformable materials with MPM

Bachelor thesis

 github.com/SirKoto/MPMSimulator

- Research and develop a simulator for deformable, elastic and plastic, objects using the Material Point Method. With explicit integration. CPU and GPU implementation.
- Wrote an introductory document to simulation using hybrid representations (both Eulerian and Lagrangian) from the point of view of a Computer Scientist.

GPU Mass-Spring Simulator

 github.com/SirKoto/particle_sim

- Interactive real-time simulator of mass-spring systems, entirely implemented on the GPU, with external collisions.
- Hair and Cloth rendering and simulation, with B-spline tessellation.

EDUCATION

MS in Innovation and Research in Informatics - Computer Graphics
Universitat Politècnica de Catalunya

📅 2020 – 2022

BS in Informatics Engineering
Major: Computer Science
Universitat Politècnica de Catalunya

📅 2016 – 2020

SKILLS

"Hard" skills

- *Well-versed*: Computer Graphics ● Geometry Processing ● Linear Algebra
- *Versed*: Computer Vision ● Computational Physics ● GPGPU programming

Programming Languages

- *Proficient*: C++ ● Python
- *Familiar*: Typescript ● Rust ● CUDA

Libraries and Tools

- *Proficient*: C++ Standard Library ● Git ● OpenGL
- *Familiar*: Vulkan ● OpenMP ● CMake

Languages

- *Spanish* - Native
- *Catalan* - Native
- *English* - Professional working proficiency
- *Japanese* - JLPT N4 equivalent

PERSONAL SKILLS

- Strong drive for self-improvement, to learn and grow professionally.
- Organized and methodic at individual and collaborative work.
- Good communication and teamwork aptitudes.
- Aware and understanding of my responsibilities.