Corentin DUMERY

3D Graphics Engineer

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17th of May 1998

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corentindumery.github.io

Interest

3D geometry | Computer vision | Computer Graphics | Operations Research Algorithms | Physics simulation | Animation

Technical Skills

- Strong C++/Python, Java, C
- OpenGL, OpenCV, Blender
- Git, CMake, Jira, Google Test
- Qt, libigl, Dear ImGui
- Tensorflow, Eigen, keras
- HTML/CSS/JS, Node.js
- Latex, Photoshop, Gimp
- Linux, Windows

Languages

French — Native

English — Fluent

TOEFL ibt (2018) 111/120
Cambridge CPE (2014) C2 level

Chinese — Basic

HSK2 (2019) 196/200

Education

2019-2020 **Master of Computing** — National University of Singapore
- Data science and 3D courses
- Completed with Highest Distinction, 4.75/5 CAP

2017-2020 **Master of Engineering** — Télécom Paris
- Specialized in Computer Graphics and Operations Research
- Completed with 4/4 GPA

2015-2017 **French Preparatory classes MPSI/MP*** — Lycée Pothier

Recent Projects

2020 **Evaluation of a Spectral Data Transformation Method for Meaningful Mesh Segmentation** (*link to project*)
- Evaluated 3D segmentation method using clustering metrics, analyzed results and concluded on method efficiency

2019-2020 **Design of Implants for Skull Reconstructive Surgery**
- Built a 3D geometry program that generates skull implants from defect skulls
- Improved 3D printing process with highly efficient 3D flattening
- Developed software for real world data of up to 1 million triangles in collaboration with Osteopore

2019 **B-Mesh Modeller** (*link to video example*)
- Created a novel modelling software inspired by a research paper, and used it for fast mesh prototyping
- Implemented 3D operations including mesh fairing, convex hulls and mesh stitching to generate model from Qt interface

Work Experience

Oct 2021 - **Visiting Researcher** — ETH Zürich
- Research on shape modeling at the Interactive Geometry Lab led by Prof. Olga Sorkine-Hornung
- Finding new ways to use our computational geometry techniques to tackle practical fabrication challenges

Mar-Sep 2021 **Research Engineer** *(fixed-term contract)* — CEA Paris-Saclay
- Independant research on hexahedral meshing for finite-element simulation
- Implemented state-of-the-art polycube deformation
- Improved on polycube labelling methods using novel machine-learning methods
- Work currently under review at a major graphics conference

Jun-Dec 2020 **3D Software Engineer** (*6 months internship*) — Squaremind
- Assisted senior engineers on CMake-based C++ project, using Git and CI tools
- Implemented OpenGL rasterization pipeline to generate large dataset used to train deep learning models
- Developed multi-threaded Qt interface that controls robotic arm and camera movements in real-time

08.2018 **Teacher Intern** — GFN
- Designed teaching material in collaboration with GFN's team
- Repaired and maintained computer lab

2017-2018 **Tutor volunteer** — FEDEEH
- Tutored teenagers with cognitive disabilities and collaborated with other tutors to create instructive and fun-filled sessions