Corentin DUMERY

3D Graphics Engineer

corentin.dumery@gmail.com

+33 6 34 10 52 25

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
- Eigen, sklearn, tensorflow
- Cuda, OpenCL, x86 Assembly
- HTML, CSS, JavaScript, 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
- Specialization in Computer Graphics, HCI and Optimization
- 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 professionals from 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

2016-2017 **Modelling and optimizing area allocation of an agricultural exploitation** (*link to French video presentation*)
- Researched a model for area allocation using real-world data from last 50 years and estimation on following years
- Compared existing optimization methods in terms of quality and computation time

Work Experience

Jun-Dec 2020 **3D Software Engineer** (*6 months internship*) — Squaremind
- Assisted senior engineers on CMake-based C++ project, using Git and CI tools
- Optimized camera and robotic arm trajectory parameters to maximize capture efficiency
- Developed OpenGL rasterization pipeline to generate large dataset used to train deep learning models
- Researched new Kalman filtering method in $SO(3)$ to improve 3D shape reconstruction
- 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

07.2018 **Seeds For The Future 2018** — Huawei
- Introduction to modern ICT and 5G at Huawei's headquarters in Shenzhen

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