



# Corentin DUMERY

3D Graphics Engineer

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corentindumery.github.io

## Interest

- 3D geometry
- Computer vision
- Computer Graphics Research
- Operations Research Algorithms
- Teaching
- Cultural exchange
- Physics simulation
- Animation

## Technical Skills

- Strong C++/Python, Java, C
- OpenGL, OpenCV, Blender
- Git, CMake, Jira, Confluence
- HTML, CSS, JavaScript, Node.js
- Latex, Photoshop, Gimp
- Linux, Windows
- Cuda, OpenCL, x86 Assembly
- Eigen, numpy, sklearn, libigl

## 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, 4.75/5 CAP
- 2017-2020 Master of Engineering Télécom Paris  
Specialization in Operations Research,  
3D and Interactive Systems, 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 objective clustering scores
  - Analyzed results and concluded on efficiency of implemented method
- 2019-2020 Design of Implants for Skull Reconstructive Surgery
  - Built a 3D geometry program that generates skull implants from defect skulls and performed highly efficient 3D flattening to improve 3D printing process
  - 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 recent research paper
  - Performed 3D operations to generate a base mesh following skeleton defined by user with linked spheres
- 2019 Dimensionality Reduction with Fast J-L Transform
  - Implemented and compared state-of-the-art dimensionality reduction methods on datasets of up to 5000 dimensions
- 2016-2017 Modelling and optimizing area allocation of 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 computing time

## Work Experience

- Jun-Dec 2020 3D Software Engineer (6 months internship) Squaremind
  - Developed rasterization pipeline to generate realistic dataset used to train 3D computer vision stitching models.
  - Implemented UV parameterization interface used to cut and flatten mesh.
  - Assisted senior engineers on building large scale CMake-based C++ project.
  - Optimized robot's camera parameters to maximize capture efficiency using highly-efficient mesh sampling.
- 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