

# Hélène HASSAN

*A highly passionate and hardworking junior engineer specialized in computer science and applied mathematics.*

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## EDUCATION

Grenoble, France 9/2021 - 4/2025	<b>Engineering Degree - ENSIMAG</b> <i>Graduate School of Engineering in Applied mathematics and Computer Science of Grenoble.</i> <b>Ranking:</b> 1st year = 4th/250, 2nd year = 5th/250 <b>Specialty:</b> computer graphics, computer vision, mathematical simulation and high performance computing.
Tokyo, Japan 4/2024 - 8/2024	<b>Academic Exchange - Tokyo Institute of Technology</b> <i>Courses in high performance computing, lambda calculus, distributed algorithms...</i>
Grenoble, France 2019 - 2021	<b>Pre-engineering preparation to French “Grandes Ecoles” - Prépa des INP</b> <b>Ranking:</b> 1st/400 <i>Intensive courses in maths, physics, computer science and chemistry.</i>
Grenoble, France 2016 - 2019	<b>French High School Diploma</b> <b>Awarded with highest honors (19,18/20)</b>

## EXPERIENCE *(non exhaustive / summarized, more info on my [website](#) )*

Paris, France 9/2024 - 3/2025	<b>Internship at Dassault Systèmes</b> <i>Generated a procedural global cloud cover for a planetary environment that runs in real-time. Improved the rendering of those clouds by reworking the team’s existing volumetric clouds algorithm.</i>
Echirolles, France 5/2023 - 8/2023	<b>Internship at Eviden Atos</b> <i>Added visual effects (fire and rain) to an application based on NVIDIA Omniverse that aim for generating synthetic datasets.</i>
Grenoble, France 9/2022 - 12/2022	<b>Part-time job at the Grenoble Informatics Laboratory (LIG)</b> <i>Studied scientific literature to make a state-of-the-art on the transposition of nudges from a domain to another, especially to the numerical domain.</i>

## PROJECTS *(non exhaustive / summarized, more info on my [website](#) )*

<b>Cloth simulation from scratch</b> <i>Simulation of a cloth using CUDA/OpenGL interoperability that takes into account collisions between the cloth and static/dynamic objects. A full report about this project is available on my website.</i>	C++, CUDA (API), OpenGL (API)   solowork   personal project
<b>3D multiplayer game from scratch</b> <i>Navigation game taking place in an open, realistic procedural world. Members can connect to a local server and navigate through the infinite ocean on a fully controllable boat as well as walk on the islands using custom-made physics collisions and buoyancy.</i>	Rust, OpenGL (API)   teamwork (4 members)   school project
<b>Raytracer from scratch</b> <i>Graphical interface allowing users to create lines and curves (splines) on a screen and cast light (rays) against them using exact intersection computations.</i>	C, SDL (API)   solowork   personal project

## SKILLS

**Languages** - French (*mothertongue*), English (*C1, fluent*), Spanish (*B1*), Japanese, Arab

**Programming languages** - C, C++, Python, Java, Rust

**APIs** - OpenGL, CUDA, OpenUSD, (*via NVIDIA Omniverse*), OpenMP, MPI

**Tools** - VSCode, JetBrains suite, RenderDoc, Nsight Compute

## MAIN INTERESTS

**Music** (*clarinet, guitar*), **Climbing**(*bouldering/lead*), **Reading** (*scientific literature, comedy, fantasy, science fiction...*), **Cooking/Eating, Drawing, Learning new languages...**