Giulio Carpi Lapi

Software Engineer - Data Scientist

+33 (0) 7 66 77 85 94 | giulio.carpilapi@icloud.com | linkedin.com/in/giuliocrp | github.com/giuliocrp

PROFILE

Master's in Applied Mathematics. Educated at an international high school in Florence, Italy, I pursued studies abroad to gain global perspectives and foster personal and professional growth. I specialize in **software engineering**, **data science** and **machine learning**.
My career goal is to leverage data science and software engineering to promote **sustainable**, **accessible**, and **inclusive business practices**, thriving in a collaborative, challenging, and supportive team environment.

Passionate about running and swimming, I am currently training for my first marathon.

PROFESSIONAL EXPERIENCE

Software Engineer Intern, ***Siemens Digital Industries Software***, *Toulouse, France* **Feb 2025 - Present**

- Developed reactive trajectory planning for robots operating in unstructured environments using Siemens Tecnomatix Process Simulate for 3D manufacturing simulation.
- Designed and implemented a 3-layer module (C# WPF UI → C++/CLI interop → native C++) to process RGB-D snapshots, convert depth buffers to world-frame point clouds, remove robot geometry, and feed filtered data to real-time collision checking and path-replanning logic.

Skills Developed: **C++**, **C#**, **C++/CLI**, **.NET (WPF)**, **Visual Studio 2022**, **Git**, **Scrum Methodology**.

***Reference**: Gautier Dumonteil, Kineo Components Developper (Internship Supervisor):* gautier.dumonteil@siemens.com

Software Engineer Intern, ***Cemosis - Modeling and Simulation***, *Strasbourg, France* **Jun 2024 - Aug 2024**

- Optimized 3D terrain mesh generation for finite element simulations in urban energy modeling.
- Developed a C++ pipeline using CGAL for triangulation, Mapbox API for elevation data integration, and JSON for configuration management.
- Contributed to the European **HiDALGO2** initiative and **NumPEx Exa-MA** project, advancing exascale computing for large-scale simulations.

Skills Developed: **C++**, **Visual Studio Code**, **Git**, **GitHub**, **Docker**, **CI/CD tools**, **MeshLab**, **Gmsh**, **Agile Methodology**.

***Internship Report**:* feelpp.github.io/ktirio-geom.docs/internship-reports-2024/terrain/index.html

***Reference**: Professor Christophe Prud'Homme, Head of Cemosis:* christophe.prudhomme@cemosis.fr

EDUCATION

MSc in Applied Mathematics *University of Strasbourg, France* **Sep 2023 - Aug 2025**
Specialization: Scientific Computation and Mathematics of Innovation

- **Key Subjects:** Programming (**C/C++, Python**), Machine Learning and Deep Learning (**TensorFlow, PyTorch, scikit-learn, NumPy, SciPy, Pandas, Matplotlib, Plotly, OpenTurns**), Databases (**SQL, NoSQL**), High-Performance Computing (**MPI, OpenCL**), Numerical Methods (**PDEs, Finite Element Methods, Model Order Reduction**).

BSc in Applied Mathematics *University of Strasbourg, France* **May 2023**

- **Key Subjects:** Programming (**Python, C++, R**), Differential and Integral Calculus, Probability and Statistics, Linear Algebra, Numerical Analysis, Differential Equations, Fourier Analysis.

LANGUAGES

English (Professional proficiency - C1) • **French** (Native speaker) • **Italian** (Native speaker)French