

# Marius Duvillard

## Applying for: Full-time Position in Machine Learning and Simulation

✉ [marius-duvillard@github.io](mailto:marius-duvillard@github.io)

✉ [marius.duvillard@gmail.com](mailto:marius.duvillard@gmail.com)

☎ (+33) 688547008

📍 1234 Abc Street, Example, EX 01234

🌐 [marius-duvillard](#)

ℝ<sup>6</sup> [marius-duvillard](#)

## Description

I am a PhD candidate in Applied Mathematics with a strong interest in machine learning, probabilistic methods, and their application in simulation. I am currently seeking a full-time position in these fields.

## Experience

**Ph.D. Student in Applied Mathematics** CEA, Cadarache France 01/10/2021 – Present

- Data Assimilation for Lagrangian Simulation.
- Developed a simulation tool for granular materials using the Material Point Method (MPM).
- Adapted Ensemble Kalman Filter for intensity correction and a variational approach for position correction.
- Applied to solid mechanics problems (MPM) and incompressible fluid dynamics (Vortex Method).
- Presented work at [ECCOMAS 2024](#) and [PARTICLES 2023](#) and [published](#).

**Machine Learning Intern** CEA, Cadarache France 04/2021 – 04/2021

- Developed neural networks constitutive models for nonlinear elastic and elastoplastic laws.
- Implemented a semi-supervised approach for penalization.
- Presented monthly progress updates within an [international working group](#)

**Mechanical Engineer Intern** Framatome, Paris France 06/2020 – 08/2020

- Studied thermal stratification in elastoplastic flexibility calculations.
- Defined a new model based on beam and shell elements.
- Integrated and applied the model on complex piping geometries.

**Intern - Account Manager** La Poste, Nantes, France 07/2019 – 08/2019

- Customer reception, sales, advice, merchandising.
- Improved skills in commercial relations and adaptability.

## Education

**Ecole Polytechnique** 01/10/2021 – Present

Ph.D. in Applied Mathematics

*Palaiseau, France*

Working with the X/Inria project-team [PLATON](#)

**Ecole Centrale de Nantes**

01/09/2018 – 31/08/2021

Engineering Student

*Nantes, France*

[Data analysis and applications in signal and image processing](#)

[Advanced Modelling and Analysis of Structures](#)

**Lycée Descartes**

01/09/2016 – 31/07/2018

Preparatory Classes for Engineering Schools

*Tours, France*

## Skills

- **Machine Learning:** 🐍 Pytorch, 🍌 Scikit-learn, 📦 Keras
- **Scientific Programming:** 🐍 Python, (Pandas, Numpy, Scipy, Plotly, etc.), 📌 C++ Cpp
- **Mechanics:** Gmsh, Abaqus, Ansys Apdl
- **Others:** Git, L<sup>A</sup>T<sub>E</sub>X

## Languages

- **French:** Native
- **English:** Professional working proficiency (TOEIC: 935)

## Interests

- 🎵 **Music:** Ancient and traditional music with galoubet tambourin, recorder, and diatonic accordion
- 🚣 **Sports:** Rowing, running, trekking
- 📖 **Reading:** Favorite novelists include Stefan Zweig, Henri Bosco, Marguerite Yourcenar, and Jean Giono 📖 [GoodReads](#)