


# Meryem BENMAHDI

X2016 - Scientific machine learning and simulation research engineer at Dassault Systèmes, and PhD candidate at INRIA



## About me

Passionate research engineer at Dassault Systèmes, currently pursuing a PhD in the fields of scientific machine learning and physics simulation at INRIA and Ecole polytechnique (PLATON Team).

 Meryem BENMAHDI

## Areas of specialization

Multi-physics simulation,  
Reduced order modeling,  
Uncertainty quantification,







## Languages

<b>French</b>	Mother tongue
<b>English</b>	Fluent
<b>Arabic</b>	Fluent
<b>Spanish</b>	Good command
<b>Chinese</b>	Basic knowledge







## Interests

Lead singer and back-up guitar of two bands, Running, Sewing, Video Editing, Horseback riding.

## EXPERIENCE

- |              |   |
|--------------|---|
| 2022-2025    | <b>Inria Platon Team, CMAP Lab</b><br>ÉCOLE POLYTECHNIQUE, PALAISEAU · France <br>PhD candidate under the supervision of Pietro Marco Congedo and Olivier Le Maître: "Physics-informed multi-fidelity approach for uncertainty quantification".<br>   |
| since 2020   | <b>Dassault Systèmes</b><br>VÉLIZY-VILLACOUBLAY · France <br>Research engineer specialized in multi-physics simulation and scientific machine learning, uncertainty quantification and neural network-based inverse-problems.<br>   |
| Mar - Jul 19 | <b>Jean le Rond d'Alembert Institute – Sorbonne University</b><br>PARIS · France <br>Research internship: Simulation of a transonic flow around the RAE2822 supercritical airfoil. RANS turbulence model validation (K-Epsilon, K-Omega and Reynolds Stress Models).<br><br><b>Previous internships:</b><br>2016-2017 - Lycée d'état Jean Zay: STEM Undergrad tutoring.<br>Summer 2018 - ARIA Technologies: Atmospheric simulation.<br>Fall 2016 - La Courtine Military Camp: Basic military training.<br>Summer 2015 - CDVIA: Public transportation system modeling. |

## EDUCATION

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|-----------|--|
| 2016–2020 | <b>École Polytechnique - Class of X2016</b><br>PALAISEAU · France <br>Engineering Degree – MSc: Applied mathematics, economics, computer science and mechanical engineering. Focus on mechanical engineering and fluid mechanics.<br>Outstanding Leadership and Outstanding Investment awards.<br> |
| 2019–2020 | <b>ISAE-SUPAERO – Class of S2020</b><br>TOULOUSE · France <br>Engineering Degree – MSc: Applied mathematics and fluid dynamics.<br>Focus on numerical simulation, HPC and optimization.<br>  |
| 2013–2016 | <b>Sorbonne University</b><br>PARIS · France <br>Bachelor of Science: Mechanical Engineering.<br>Summa cum laude.<br>  |

## TECHNICAL SKILLS

**Scientific Machine Learning:** Python, Pytorch, Jupyter, Tensorboard, PINN (Physics-Informed Neural Networks), Gaussian process surrogates, Uncertainty quantification.

**High Performance Computing:** C, C++, Cuda, MPI, OpenMP.

**Physics Simulation Fields:** Fluid dynamics, Internal and external aerodynamics, Hemodynamics, Structural mechanics, Thermomechanics.

**Simulation Software:** XFlow, Ansys Fluent, OpenFOAM, STAR-CCM+, FreeFEM, elsA.

**Miscellaneous:** Git, Java, Matlab, OCaml, Adobe Premiere Pro, Adobe After Effects.