

Damien Bonnet-Eymard

PhD student in Scientific Machine Learning @ KU Leuven | MSCA Fellow

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I am a PhD researcher with a solid background in both machine learning and physics, developing state-of-the-art Physics-Informed Neural Networks to address complex physics problem. With a strong proficiency in Python and experience as an open-source contributor, I am seeking a challenging position where I can apply my skills in scientific machine learning.

Experience

PhD in SciML @ KU Leuven (2021 - Present)

Marie Skłodowska-Curie Actions (MSCA) fellow, within the [GREYDIENT](#) project, developing grey-box models combining data-driven and physics-based approaches. Research focuses on efficient and robust Physics-Informed Neural Networks (PINNs) for solid mechanics, including:

Uncertainty Propagation: Propagating microscale uncertainties to the mechanical response of composite materials.

 [Bonnet Eymard et al. ISMA/USD, 2024.](#)

Material Parameter Identification: Recovering material properties from full-field measurements.

 [Bonnet Eymard et al. ISRERM, 2024.](#)

Data Analysis Internship @ EDF (PRISME R&D) (2020)

Developed tools within the modeling and monitoring R&D department:

- New component for the ThermoSysPro library (Modelica) modeling nuclear reactor core heterogeneity.
- Regularized regression model (pandas, Scikit-learn) predicting power plant operating points.

Data Processing Internship @ Diocles (2019 - 2020)

Worked within an international team on processing data from body scanners:

- Processed 3D data (mesh, point cloud) using MATLAB for indicator extraction.
- Implemented a heat kernel signature algorithm for shape analysis.
- Designed and implemented a measurement acquisition error pipeline.

Education

KU Leuven (2021 -)

PhD student under supervision of Prof. [David Moens](#) and Prof. [Matthias G. R. Faes](#)



Ecole Centrale de Lyon (2017 - 2021)

Degree (Master): General Engineer - Computer Science Option

Main courses: Fluid/Continuum Mechanics, Statistics, Signal Processing, Automation, AI and Machine Learning



Classe Préparatoire Sainte-Geneviève (2015 - 2017)

Main courses: Maths, Physics, Chemistry



Tech Stack

Machine Learning

PyTorch; JAX; Cuda; DeepXDE*

*active contributor

Data Science

Scikit-learn; Pandas; R; MATLAB



Physics

FEniCS; Modelica; Abaqus

Interests & Side Projects

Sports: Tennis, running, and cycling.

Programming: Open-source contributor. Several side-projects, including:

- **Routing Algorithm:** A routing algorithm that takes safety into account. 
- **Image Mosaic:** Creating an image mosaic using a collection of images, written in Matlab. 
- **Particle Swarm Optimization:** Visualization of the PSO algorithm, written in Matlab. 