

Eve Le Guillou

HPC · DISTRIBUTED COMPUTING
SCIENTIFIC COMPUTING

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WORK EXPERIENCE

- November 2025 - Now **Post-doctoral position** TECHNICAL UNIVERSITY OF MUNICH (TUM), CAMPUS HEILBRONN
Title: *Improving the ICON model within the Warm World project*
- April 2022 - October 2025 **Ph.D. in Computer Science** CNRS, SORBONNE UNIVERSITÉ (LIP6), UNIVERSITÉ DE LILLE (CRISTAL)
Title: *Distributed Topological Analysis*
Advisors: Julien Tierny and Pierre Fortin
- Oct. 2021 - March 2022 **Research Engineer** CNRS, SORBONNE UNIVERSITÉ (LIP6), UNIVERSITÉ DE LILLE (CRISTAL)
Title: *Development of topological data analysis algorithms in a distributed memory context.*
- March - Sept. 2021 **Engineering Intern** TRINOV, FRANCE
Title: *Development of a software for waste management to automatize the classification of scanned documents and extraction of data using deep learning models.*
- July - August 2019 **Research Intern** DEFROST TEAM AT INRIA, FRANCE
Title: *Development of bindings and unit testing for the new Python3 interface of the multiphysics simulation oriented platform SOFA.*
- July - August 2018 **Engineering Intern** IT DEPARTMENT OF THE SOUTH PROVINCE, NEW CALEDONIA
Title: *Configuration of dynamic dashboards to evaluate the health of the information system using the Elastic Stack.*

EDUCATION

- 2017 - 2021 **Multidisciplinary engineering degree** ÉCOLE CENTRALE DE LILLE, FRANCE
"Data Science and Artificial Intelligence" track.
Completed with a GPA of 3.7.
- 2019 - 2020 **Master of Science** CRANFIELD UNIVERSITY, UK
Computational and Software Techniques in Engineering in the "Software Engineering for Technical Computing" track.
Completed with an overall mark of 87.5/100.
- 2015 - 2017 **Classe Préparatoire aux Grandes Écoles** (in Maths and Physics) LYCÉE CORNEILLE DE ROUEN, FRANCE
Intensive undergraduate preparation course for admission to engineering Grandes Ecoles.

RESEARCH

PUBLICATIONS

2026

- **Distributed Discrete Morse Sandwich: Efficient Computation of Persistence Diagrams for Massive Scalar Data**, Eve Le Guillou, Pierre Fortin, Julien Tierny.
IEEE Transactions on Parallel and Distributed Systems, vol. 37, no. 1, pp. 137-154, Jan. 2026.
<https://doi.org/10.1109/TPDS.2025.3626047>

2024

- **TTK is Getting MPI-Ready**, Eve Le Guillou, Michael Will, Pierre Guillou, Jonas Lukasczyk, Pierre Fortin, Christoph Garth, Julien Tierny.
IEEE Transactions on Visualization and Computer Graphics, vol. 30, no. 8, pp. 5875-5892, Aug. 2024.
<https://doi.org/10.1109/tvcg.2024.3390219>

2021

- **How to Modify LAMMPS: From the Prospective of a Particle Method Researcher**, Andrea Albano, Eve le Guillou, Antoine Danzé, Irene Moulitsas, Iwan H. Sahputra, Amin Rahmat, Carlos Alberto Duque-Daza, Xiaocheng Shang, Khai Ching Ng, Mostapha Ariane, and et al.
ChemEngineering, vol. 5, no. 2, article 30, 2021.
<https://doi.org/10.3390/chemengineering5020030>

TALKS

2025

- **Distributed Discrete Morse Sandwich: Efficient Computation of Persistence Diagrams for Massive Scalar Data**, September 23rd, ParaView User Day
Annual meeting of ParaView users organized by Kitware
- **Distributed Topological Data Analysis with TTK and MPI**, June 26th, COMPAS
French national conference on parallelism, architecture and system
- **Distributed Discrete Morse Sandwich: Efficient Computation of Persistence Diagrams for Massive Scalar Data**, June 2nd, Journées APR
Annual meeting of the APR team from the LIP6 laboratory

2024

- **TTK is Getting MPI-Ready**, December 12th, CFHP Team Presentation
Monthly meeting of the CFHP team from the CRISAL laboratory
- **TTK is Getting MPI-Ready**, October 17th, IEEE VIS conference (Rank: A)
- **TTK is Getting MPI-Ready**, September 26th, ParaView User Day Europe
Annual meeting of ParaView users organized by Kitware
- **TTK is Getting MPI-Ready**, June 18th, Journées Visualization
Annual meeting of the french visualization community
- **TTK is Getting MPI-Ready**, May 30th, Journées APR
Annual meeting of the APR team from the LIP6 laboratory

2023

- **Topological Data Analysis on 1, 536 cores**, November 8th, MeSU User Day
Annual meeting of the MeSU users of Sorbonne Université

PROFESSIONAL SERVICE

2024

- Reviewer for PDSEC (IPDPS workshop)

AWARDS

2019-2020

Best Overall Woman
In Computational Engineering Sciences.

CRANFIELD UNIVERSITY

2019-2020

Best Overall Achievement

CRANFIELD UNIVERSITY

In the "Software Engineering for Technical Computing" track on the M.Sc. in Computational and Software Techniques in Engineering

TEACHING

2023 - 2024

- **Distributed systems and processing** , 21*h* in Master 2 using C and MPI
- **Fundamentals of C programming** , 21*h* in Bachelor 2 using C
- **Shell and scripting language** , 12*h* in Bachelor 2 using Unix and Git

2022 - 2023

- **Algorithms and Programming** , 36*h* in Bachelor 1 using Python
- **Shell and scripting language** , 12*h* in Bachelor 2 using Unix and Git

2021 - 2022

- **Algorithms and Programming** , 36*h* in Bachelor 1 using Python