Eve Le Guillou

HPC · Distributed memory
Topological Data Analysis

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Education

2017 - 2021 **Multidisciplinary engineering degree** École Centrale de Lille, France
"Data Science and Artificial Intelligence" track.

2019 - 2020 **Master of Science** Cranfield University, UK
Computational and Software Techniques in Engineering in the "Software Engineering for Technical Computing" track.

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.

Work experience

April 2022 - Present **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 plateform 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.*

Research

Publications

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.

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.

Talks

2025

- **Distributed Topological Data Analysis with TTK and MPI** , *June* 26^{th}, *COMPAS*
- **Distributed Discrete Morse Sandwich: Efficient Computation of Persistence Diagrams for Massive Scalar Data** , *June* 2^{nd}, *Journées APR*

2024

- **TTK is Getting MPI-Ready** , *December* 12^{th}, *CFHP Team Presentation*
- **TTK is Getting MPI-Ready** , *October* 17^{th}, *IEEE VIS*
- **TTK is Getting MPI-Ready** , *September* 26^{th}, *ParaView User Day Europe*
- **TTK is Getting MPI-Ready** , *June* 18^{th}, *Journées Visualization*
- **TTK is Getting MPI-Ready** , *May* 30^{th}, *Journées APR*

2023

- **Topological Data Analysis on** $1,536$ **cores** , *November* 8^{th}, *MeSU USers Day*

Professional Service

2024

- Reviewer for **ISPC**

Awards

2019-2020 Best Overall Woman — Cranfield University

In Computational Engineering Sciences.

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

- **Système et traitements répartis** , $21h$ in Master 2 using C and MPI
- **Base de la programmation en C** , $21h$ in Bachelor 2 using C
- **Shell et langage de script** , $12h$ in Bachelor 2 using Unix and Git

2022 - 2023

- **Algorithmes et Programmation** , $36h$ in Bachelor 1 using Python
- **Shell et langage de script** , $12h$ in Bachelor 2 using Unix and Git

2021 - 2022

- **Algorithmes et Programmation** , $36h$ in Bachelor 1 using Python