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Elodie Maignant

Current position

Oct 2020 – present **PhD Student**, *Centre Inria d'Université Côte d'Azur, France.*
"Geometric manifold learning". Under the supervision of Xavier Pennec and Alain Trouvé.

Education

Sep 2019 – Sep 2020 **Master's degree in Applied Mathematics**, *ENS Paris-Saclay, France.*
Modelisation, Vision, Learning (MVA)

Sep 2016 – Sep 2020 **Master's degree – Mathematics**, *ENS Paris-Saclay, France.*
2019 Master's degree in Higher Education in Mathematics with specialisation in Effective Algebra. Successful candidate to the Agrégation de Mathématiques (rank 66/308).
2017 Bachelor's degree in Mathematics.

Sep 2014 – Sep 2016 **Classe préparatoire en Mathématiques et Physique**, *Lycée Saint Louis, Paris.*
Intensive two-year study course in Mathematics and Physics preparing for the competitive entrance examinations to the French "Grandes Écoles".

Research experience

Apr 2020 – Sep 2020 **Master's research internship**, *ENS Paris-Saclay, France.*
"Data embedding and symmetric spaces with applications to molecular dynamics". Under the supervision of Alain Trouvé.

Apr 2018 - Jul 2018 **Visiting Student**, *Albert-Ludwigs-Universität Freiburg, Germany.*
"Statistical analysis of geometric shapes with applications to anthropology". Visiting JProf. Philipp Harms.

Jan 2017 - Jun 2017 **Bachelor's research internship**, *ENS Paris-Saclay, France.*
"Learning stochastic systems in high dimension". Under the supervision of Alain Trouvé.

Talks and conferences

Sep 2022 **GESDA Introductory School – Poster presentation**, *Cargese, France.*
"Looking for invariance in Locally Linear Embedding."

Jun 2022 **Curves and Surfaces 2022 – Poster presentation**, *Arcachon, France.*
"Looking for invariance in Locally Linear Embedding."

Jan 2022 **GTTI (Working Group on Image Processing) – Invited talk**, *ENS Paris-Saclay, France.*
"Introducing a generalisation of Locally Linear Embedding to manifold-valued data."

Nov 2021 **PhD Seminar in Analysis – Invited talk**, *Université Paris-Saclay, France.*
"A generalisation of Locally Linear Embedding to manifold-valued data."

Oct 2021 **CJC-MA 2021 – Oral presentation**, *École Polytechnique, France.*
"A generalisation of Locally Linear Embedding to manifold-valued data."

Aug 2021 **GTDAML 2021 – Oral presentation**, *Online*
"Visualisation of Kendall shape spaces with Geomstats."

Jul 2021 **GSI'21 – Oral presentation**, *Paris, France.*
"Parallel transport on Kendall shape spaces."

Publications

2023 **"Riemannian Locally Linear Embedding with Applications to Kendall Shape Spaces"**, *GSI'23. Springer International Publishing.*
Elodie Maignant, Alain Trouvé, Xavier Pennec.

2023 **"Towards Quotient Barycentric Subspaces"**, *GSI'23. Springer International Publishing.*
Anna Calissano, Elodie Maignant, Xavier Pennec.

2021 **"ICLR 2021 challenge for computational geometry & topology: Design and results."**, *ICLR 2021.*
Nina Miolane, et al.

2021 **"Parallel Transport on Kendall Shape Spaces"**, *GSI'21. Springer International Publishing.*
Nicolas Guigui, Elodie Maignant, Alain Trouvé, Xavier Pennec.

2021 **"Identification of the Primary Factors Determining the Specificity of the human VKORC1 Recognition by Thioredoxin-fold Proteins"**, *International Journal of Molecular Sciences 22.2: 802.*
Maxim Stolyarchuk, Julie Ledoux, Elodie Maignant, Alain Trouvé, Luba Tchertanov.

2019 **"Approximation of Riemannian Distances and Applications to Distance-Based Learning on Manifolds"**
Philipp Harms, Elodie Maignant, Stefan Schlager.

2018 **"Approximations of distances and kernels on shape space"**, *Workshop on New Directions in Shape Analysis. Math in the Black Forest.*
Philipp Harms, Elodie Maignant.

Teaching

Oct 2020 – Jun 2022 **Teaching assistant, in charge of tutorials**, *Université Paris-Saclay, France.*
Global Analysis, Topology and Differential Calculus.

Sep 2018 – Sep 2020 **Interrogatrice en classe préparatoire**, *Lycée Saint-Louis, Paris.*
Examiner in Mathematics for weekly oral interrogations in small groups.

Languages

French Native

English Complete working knowledge *Cambridge English Advanced C1*

German General working knowledge

Miscellaneous

Volunteering I am active in promoting women in sciences and I have been involved in the organisation of several events aimed at this end. More generally, I enjoy teaching and am strongly committed to education for all. I am also devoted to the animal cause and have done voluntary work with a shelter.

Personal Interest I am passionate about music and art. I have been singing and playing the viola and the saxophone since I was a very young age.