

Mathematics and Modeling Department
Building GMM, Office 122

Toulouse Institute of Mathematics
Building 1R1, Office 103

INSA Toulouse
135 avenue de Rangueil
31077 TOULOUSE Cedex 04, FRANCE

✉ juliette.chevallier@insa-toulouse.fr
✉ juliette.chevallier@math.univ-toulouse.fr

📄 juliette-chevallier.pages.math.cnrs.fr

French nationality, born on 01/01/1992

Juliette Chevallier

Associate Professor
Toulouse Institute of Mathematics

Professional Background

- From 2021 **Associate Professor** (Maîtresse de Conférences), *Toulouse Institute of Mathematics (IMT)*, Mathematics and Modeling Department (GMM), INSA Toulouse.
- 2020 – 2021 **Post-doctorate**, *Inria Sophia Antipolis, Maasai team, J.A. Dieudonné Laboratory (LJAD)*, Côte d'Azur University, Nice, France. With Charles Bouveyron and Frédéric Preciosio.
SUBJECT: Modeling and analysis of complex and massive heterogeneous data with deep generative models.
- 2016 – 2019 **Doctorate**, *Center for Applied Mathematics (CMAP)*, École polytechnique, Palaiseau, France. Under the supervision of Stéphanie Allasonnière.
SUBJECT: Statistical models and stochastic algorithms for the analysis of longitudinal Riemannian manifold valued data with multiple dynamic.

Academic Background

- 2016 – 2019 **PhD in Applied Mathematics**, *École polytechnique*, Palaiseau, France.
Under the supervision of Stéphanie Allasonnière.
SUBJECT: Statistical models and stochastic algorithms for the analysis of longitudinal Riemannian manifold valued data with multiple dynamic.
KEYWORDS: Riemannian geometry, longitudinal data, stochastic optimization, non-linear mixed-effect models, EM-like algorithms, spatio-temporal analysis, Bayesian estimation.
- 2012 – 2016 **Magistère in Fundamental and Applied Mathematics (MFA)**, *Paris-Sud University, Paris-Saclay University*, Orsay, France.
Bachelor's degree in Fundamental and Applied Mathematics ;
Master's degree in Mathematics for Life Sciences, with distinction.
- 2014 – 2015 **External agrégation of Mathematics**.
Option scientific calculation; Master's degree in mathematics teacher training.
- 2013 – 2014 **iGEM Competition 2014**.
Worldwide synthetic biology competition that is supported by the Massachusetts Institute of Technology (MIT). Getting the gold medal for the Paris-Saclay team.
- 2010 – 2012 **Classes Préparatoires**, *Pierre Corneille High School*, Rouen, France.
MP, Computer science curriculum.
- 2007 – 2010 **General Baccalauréat**, *Pierre Gallilée High School*, Franqueville Saint-Pierre, France.
Scientific, Specialty mathematics, with distinction.

Scientific Productions

Journal Papers

- SIIMS 2021 **A coherent framework for learning spatiotemporal piecewise-geodesic trajectories from longitudinal manifold-valued data**, *Juliette Chevallier, Vianney Debaveleere and Stéphanie Allasonnière*, SIAM Journal on Imaging Sciences (to appear in 2021), Hal-01646298.
- CSDA 2020 **A new class of EM algorithms. Escaping local minima and handling intractable sampling**, *Juliette Chevallier and Stéphanie Allasonnière*, Computational Statistics and Data Analysis, July 2021, Hal-02044722, doi:10.1016/j.csda.2020.107159.

Conference Proceedings

- JDS 2020 **Analyse statistique de données anatomiques longitudinales de patients traités. Application au suivi de chimiothérapie**, *Juliette Chevallier and Stéphanie Allasonnière*, 52^{èmes} Journées de Statistiques of the the French Society of Statistics (SFdS). Côte d'Azur University, Nice, France, May 2020 (Postponed to 2021).
- NeurIPS 2017 **Learning spatiotemporal piecewise-geodesic trajectories from longitudinal manifold-valued data**, *Juliette Chevallier, Stéphane Oudard and Stéphanie Allasonnière*, Advances in Neural Information Processing Systems 30. Long Beach, CA, USA, December 2017. Hal-01646230.

Talks and Posters

- July 2022 **“Unstructured Data Analysis” workshop**, *Toulouse Institute of Mathematics*, France.
- May 2022 **Statistics and Optimization Seminar**, *Toulouse Institute of Mathematics*, France.
- January 2022 **MIAT seminar**, *INRAE Toulouse* (remote).
- June 2021 **“Causality & Missing Data” seminar**, *Inria Montpellier*, France (remote).
- April 2021 **Statistics Seminar**, *Marseille Institute of Mathematics*, France (remote).
- June 2020 **Young Mathematicians’ Seminar**, *Orsay Institute of Mathematics*, France (remote).
- May 2020 **Maasai seminar**, *Inria Sophia-Antipolis*, France (remote).
- January 2020 **“Explain to me” seminar**, *Orsay Institute of Mathematics*, France.
- May 2019 **“Image Optim. and Probability” seminar**, *Bordeaux Institute of Mathematics*, France.
- April 2019 **“Signal and Learning” seminar**, *Marseille Institute of Mathematics*, France.
- April 2019 **CMLA seminar**, *ENS Paris-Saclay*, Cachan, France.
- January 2019 **CMAP and CMLS PhD seminar**, *École polytechnique*, Palaiseau, France.
- May 2018 **Machine Learning Journal Club**, *École polytechnique*, Palaiseau, France.
- December 2017 **Session poster**, *NeurIPS conference*, *Long Beach*, USA.
- October 2016 **Back-to-school workshop, Master Mathematics for Life Sciences**, *Paris-Saclay University*, Orsay, France.
- October 2014 **iGEM competition Giant Jamboree**, *Massachusetts Institute of Technology*, Boston, USA.

Educational Investment

Teaching Background

National Institute of Applied Sciences of Toulouse, France

- From 2022 **Data Analysis, Clustering**, *INSA Toulouse*.
4th year of the applied mathematics specialization.
- From 2021 **Elements of Stochastic Modeling**, *INSA Toulouse*.
4th year of the applied mathematics specialization.
- From 2021 **High Dimensional and Deep Learning**, *INSA Toulouse*.
5th year, applied mathematics specialization.
- From 2021 **Deep Learning**, *ENSEEIH & INSA Toulouse*.
5th year of the apprenticeship program “Modeling and Artificial Intelligence”.

Côte d’Azur University, Nice, France

- 2020 – 2021 **Advanced Learning, Times series analysis**, *Côte d’Azur University*.
MSc Data Science and Artificial Intelligence.

École Normale Supérieure Paris-Saclay, Cachan, France

- 2016 – 2019 **Computational Statistics (Practical works and tutorials)**, *ENS Paris-Saclay*.
Master Mathématiques Vision Apprentissage. Prof. Stéphanie Allasonnière.
(Complementary teaching mission)

École polytechnique, Palaiseau, France

- 2018 – 2019 **Mathematical foundations of Data Science (tutorials)**, *HEC Paris and École polytechnique*.
(Complementary teaching mission).
MSc Data Science for Business. Prof. Flore Nabet.
- 2016 – 2019 **Probability (Practical works python for probability. Students projects supervising.)**,
École polytechnique. (Complementary teaching mission).
Core curriculum, 1st year. Prof. Josselin Garnier and Sylvie Méléard.

Classes préparatoires and High Schools

- 2015 – 2016 **Oral examiner in PCSI**, *Turgot High School*, Paris 3rd, France.
- 2014 – 2015 **Mathematics teacher**, *Lakanal High School*, Bourg-la-Reine, France.
Internship under the supervision of Pascal Bray.

Educational Responsibilities

- From 2021 **School referent for apprenticeship students**, *INSA Toulouse*.
“Modeling and Artificial Intelligence” (ModIA) and “Applied Mathematics” (MA) majors.

Collective Responsibilities & Other Activities

Administrative Responsibilities

- From 2023 **Equality Committee Member**, *Toulouse Institute of Mathematics (IMT)*, France.
- From 2022 **Elected member of the Scientific Council of INSA Toulouse**, France.

Scientific Responsibilities

- From 2022 **Co-organizer of the Statistics and Optimization seminar**, *Toulouse Institute of Mathematics (IMT)*, Paul Sabatier University, France.
- From 2022 **Co-head of the UNREAL project team (Unstructured Data Analysis)**, *International Center for Mathematics and Computer Science of Toulouse*, LabEx CIMI.
- 2018 – 2019 **Co-organizer of the CMAP and CMLS PhD seminar**, *Center for Applied Mathematics (CMAP)*, École polytechnique, Palaiseau, France.
- 2018 **Organizer of the meeting of all PhD's of the 2nd year**, *Center for Applied Mathematics (CMAP)*, École polytechnique, Palaiseau, France.

Scientific Committee

- 2021 **Congress of Young Researchers in Applied Mathematics (CJC-MA)**, *École polytechnique*, Palaiseau, France.

Proofreading Efforts

Conferences

- 2019 – 2023 **NeurIPS** – Neural Information Processing Systems.
- 2019, 2021 – 2023 **ICML** – International Conference on Machine Learning.
- 2021 – 2022 **ICLR** – International Conference on Learning Representations.

Journal Papers

- 2022 **IEEE TCCN** – Transactions on Cognitive Communications and Networking.
- 2022 **JCMSE** – Journal of Computational Methods in Sciences and Engineering.

Scientific Dissemination

- From 2022 **ANITI Mentor'AI network**.
Program to mentor female students from bachelor to master level towards AI careers. Program driven by the ANITI (Institute of Artificial and Natural Intelligence of Toulouse) parity commission.
- 2019 **Three minutes thesis**.
French version of the 3MT^{MC} competition, that is organized by the Conference of University Presidents (CPU) and the National Center for Scientific Research (CNRS).
- 2016 – 2018 **The Pi Day**.
Treasurer of the PiDay association and co-organizer of *The tour of π 2017*.
- 2017 **Tell me your thesis!**.
Mathematical “speed-meetings” between PhD students and the general public, organized by the Mathematical Sciences Foundation of Paris (FSMP).