Julien Martinelli

PhD graduate

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Born 05/26/1994

Academic background

Feb. 2022 - **Postdoctoral Researcher**, Aalto University, Probabilistic Machine Learning team, Helsinki.
Supervised by Samuel Kaski, Markus Heinonen and Vikas Garg

Oct. 2018 - Feb. 2022 **PhD in Computer Science**, *On learning mechanistic models from time series data with applications to personalised chronotherapies*, Inria Saclay, Institut Curie Saint-Cloud, École polytechnique.
Supervised by François Fages and Annabelle Ballesta

Apr.-Sept. 2018 **Summer Intern**, *Learning mechanistic models from time series data*, Inria Saclay, Lifeware Team.
Supervised by François Fages

2017 – 2018 **Masters in Random Modelling, Finance and Data Science, M2MO**, *Data Science track*, Université de Paris.

May-July 2017 **Summer Intern**, *Random matrix theory, Application to community detection within networks*, Laboratoire MAP5, Université de Paris.
Supervised by Manon Defosseux

2016 – 2017 **First year of Masters in Applied Mathematics**, Université de Paris.
ranked 1^{st}

2012 – 2015 **BSc. Mathematics**, Université de Paris.

Publications

Publications

2022 **Accelerating metabolic models evaluation with statistical metamodels: application to Salmonella infection models**, *Clémence Frioux, Sylvie Huet, Simon Labarthe, Julien Martinelli, Thibault Malou, David Sherman, Marie-Luce Taupin, Pablo Ugalde-Salas*, *ESAIM Proceedings & Surveys*.

2021 **A mathematical model of the circadian clock and drug pharmacology to optimize irinotecan administration timing in colorectal cancer**, *Janina Hesse, Julien Martinelli, Ouda Aboumanify, Annabelle Ballesta and Angela Relógio*, *Computational and Structural Biotechnology*.

2021 **Model learning to identify systemic regulators of the peripheral circadian clock**, *Julien Martinelli, Xiao-Mei Li, Sandrine Dulong, Sylvain Soliman, Francis Lévi, François Fages and Annabelle Ballesta*, *Bioinformatics*.

Proceedings

2023 **Multi-Fidelity Bayesian Optimization with Unreliable Information Sources**, *Petrus Mikkola, Julien Martinelli, Louis Filstroff and Samuel Kaski*, Accepted for publication in *Proceedings of the International Conference on Artificial Intelligence and Statistics (AISTATS)*.

2019 **On Inferring Reactions from Data Time Series by a Statistical Greedy Heuristics**, *Julien Martinelli, Jeremy Grignard, Sylvain Soliman and François Fages*, Proceedings of *the Seventeeth International Conference on Computational Methods in Systems Biology*, 352-355.

Workshop Communications

2023 **Preferential Heteroscedastic Bayesian Optimization with Informative Noise Priors**, *Marshal Sinaga, Julien Martinelli and Samuel Kaski, NeurIPS 2023 Workshop on Adaptive Experimental Design and Active Learning in the Real World.*

2023 **Learning relevant contextual variables within Bayesian optimization**, *Julien Martinelli, Ayush Bharti, Armi Tiihonen, Louis Filstroff, S.T. John, Sabina J. Sloman, Patrick Rinke and Samuel Kaski, NeurIPS 2023 Workshop on Adaptive Experimental Design and Active Learning in the Real World.*

2023 **Leveraging expert feedback to align proxy and ground truth rewards in goal-oriented molecular generation**, *Julien Martinelli, Yasmine Nahal, Duong Lê, Ola Engkvist and Samuel Kaski, NeurIPS 2023 Workshop on New Frontiers of AI for Drug Discovery and Development.*

2019 **A statistical unsupervised learning algorithm for inferring reaction networks from time series data**, *Julien Martinelli, Jeremy Grignard, Sylvain Soliman and François Fages, ICML 2019-Workshop on Computational Biology.*

Submitted

2023 **Learning relevant contextual variables within Bayesian optimization**, *Julien Martinelli, Ayush Bharti, Armi Tiihonen, Louis Filstroff, S.T. John, Sabina Sloman, Patrick Rinke and Samuel Kaski*, under review at *AISTATS 2024*.

2022 **Reactmine: a search algorithm for inferring chemical reaction networks from time series data**, *Julien Martinelli, Jeremy Grignard, Sylvain Soliman, Annabelle Ballesta and François Fages.*

Oral Communications

Invited Talks

February 2023 **Biostatistics Seminar**, *Bordeaux Population Health Center.*

January 2023 **Public Seminar - CRiStAL team**, *Université de Lille.*

November 2022 **AI Day**, *Helsinki.*

July 2022 **Workshop on Hybrid models and methods in systems medicine**, *Institut Curie, Paris.*

Talks

May 2023 **Machine Learning Coffee Seminar**, *Helsinki.*

August 2022 **Finnish Center for Artificial Intelligence - Get together**, *Helsinki.*

August 2021 **CEMRACS - Data Assimilation and Reduced Modeling for High Dimensional Problems**, *Luminy.*

July 2021 **Twentieth European Conference on Computational Biology**, *Remote.*

June 2021 **Tenth biennial of the Society of Applied and Industrial Mathematics (SMAI)**, *La Grande Motte.*

May 2021 **Workshop Modelling Heterogeneous populations with applications in biology**, *Remote.*

April 2021 **Monthly seminar BIOSS-IA**, *Remote.*

May 2019 **BIOSS-IA Days**, *Laboratoire d'Informatique Fondamentale d'Orléans.*

December 2018 **BIOSS-IA Days**, *Pasteur Institute, Paris.*

Poster Sessions

September 2023 **ELLIS Robust ML Workshop**, *Helsinki.*

April 2023 **AISTATS 2023**, *València.*

July 2021 **JOBIM 2021**, *Remote*.

January 2021 **Winter school AI4Health**, *Remote*.

June 2019 **Summer School Formal Modeling of Biological Regulatory Networks**, *Porquerolles*.

Teaching

2022 – 2023 **Teaching Assistant**, *MSc.*, Machine Learning: Advanced Probabilistic Methods, Aalto University.

2019 – 2021 **Teaching Assistant**, *2nd year BSc.*, Analysis 4, Multivariate functions, Université de Paris.

2018 – 2019 **Teaching Assistant**, *1st year BSc.*, Mathematics and Calculus 2, Université de Paris.

Supervision and Advising

September 2023 – **Xinyu Zhang**, *Research Assistant*, 2nd year MSc. student, Probabilistic Neural Additive Models for Interpretable Machine Learning.
Joint supervision with S.T. John

June 2023 – **Marshal Sinaga**, *PhD Student*, Bayesian Experimental Design.
Advisor

June – August 2023 **Duong Le**, *Summer Intern*, 3rd year BSc. student, Benchmarking Human-In-The-Loop and active learning strategies for molecular generation.
Joint supervision with Yasmine Nahal

June – August 2023 **Xinyu Zhang**, *Summer Intern*, 1st year MSc. student, Probabilistic Neural Additive Models for Interpretable Machine Learning.
Joint supervision with S.T. John

June – August 2023 **Kaul Rajat**, *BSc Thesis supervision*, 3rd year BSc. student, Learning Biological ODE models from time series data.

Programming skills

Programmation Python, R, Matlab, LaTeX, Shell

Tools GitHub, Vim

Languages

Native French, fluent English