Nikita Lagrange

3rd year PhD Student

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Research Interests

I am interested in the development of new machine learning methods, in particular causal discovery algorithms, from the perspective of their application to biomedical data

Education

Since Oct. 2022 **PhD Computer Science**,
CNRS, Sorbonne University, Institut Curie, Paris, France,
Thesis title : **Modelling hidden causes in disease progression**
Director : Dr. Hervé Isambert (Research Director at CNRS)
Co-supervisor : Dr. Barbara Bravi (Lecturer at Imperial College London)

Since 2018, *Sorbonne University*, Paris, France,

2020-2022 **M.Sc. Bioinformatics & Modelling**,
Grade : with high honours
Rank : 1/10
Research internship : **ksub : k-mer substraction for molecular portraits**
Supervisor : Pr. Daniel Gautheret (I2BC, Paris-Saclay University)
Courses in machine learning, sequence bioinformatics, structural bioinformatics, biological networks, computational neuroscience, biomathematics, graph theory

2018-2020 **B.Sc. Sciences of Live**,
Grade : with high honours
Interdisciplinary courses ranging from the fundamentals of biology to biomathematics and bioinformatics

Teaching and consulting

Since 2024 **Consultant**, *Sorbonne University*, Paris, France,
Analysis of data from student satisfaction surveys in the context of a new pedagogy using an exploratory analysis

2022-2023 **Teaching Assistant**, *Sorbonne University*, Paris, France,
Teaching Python and C programming to undergraduates and biological network inference to masters students

Research Publications

1. Sella, N. *et al.* Preserving information while respecting privacy through an information theoretic framework for synthetic health data generation. *npj Digital Medicine* **8,** 1-16. https://www.nature.com/articles/s41746-025-01431-6 (2025).

2. Simon, F. *et al.* CausalXtract, a flexible pipeline to extract causal effects from live-cell time-lapse imaging data. *eLife* **13.** https://doi.org/10.7554/eLife.95485 (2025).

3. Lagrange, N. & Isambert, H. *An efficient search-and-score algorithm for ancestral graphs using multivariate information scores* arXiv [cs]. 2024. http://arxiv.org/abs/2412.17508.

Presentations

Sept. 2024 **ADIC Young Researchers Retreat** , Prague, Czech Republic,
Oral presentation : Reliable Causal Discovery from Information Theoretic Principles (State of the art & ongoing project)

Sept. 2023 **AI-DSCY Machine Learning Workshop**, Paris, France,
Oral presentation : Improving Graphical Models Through Data Generative Approaches

Academic Services

Since 2024 **Representative of doctoral students on EDITE doctoral school board**, Paris, France,
Participation in the doctoral school board and decision-making processes

Oct. 2024 **Reviewer for the NeurIPS BDU Workshop 2024**,
Review of two submissions for the NeurIPS 2024 Workshop on Bayesian Decision-making and Uncertainty

Skills & Languages

Computer

Languages , : Advanced
, , Shell : Intermediary
Mathematica, MATLAB,
, HTML : Basic

Tools Cluster computing - PBS

Languages

French native

English fluent