








Jules Olayé, Ph.D. Student

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Education


- 2022 – present  **Ph.D. Thesis** at École Polytechnique.
Ph.D. advisors: *Marie Doumic and Milica Tomašević*.
Thesis subject: *Stochastic and deterministic approaches to modelling telomere shortening*.
- 2021 – 2022  **M2 Mathematics for the Life Sciences** at Paris-Saclay University.
Graduated with highest honours.
- 2020 – 2021  **M1 Applied Mathematics** at Paris-Saclay University.
Top 1-2 in class.
- 2017 – 2020  **L3 Fundamental and Applied Mathematics** at Paris-Saclay University.
Recipient of Jacques Hadamard Foundation Excellence Scholarship.

Internships


- 2021 – 2022  **Research internship in stochastic modeling** at INRIA Paris-Saclay, 5 months.
Internship advisor: *Frédérique Clément*.
Internship subject: *Modelling embryonic neurogenesis in the cerebral cortex*.
- 2020 – 2021  **Research internship in bioinformatics** at Institut Pasteur, 3 months.
Internship advisors: *Cyril Matthey-Doret and Romain Koszul*.
Internship subject: *Detection of structural variations using machine learning algorithms*.
- 2019 – 2020  **Research internship in epidemiology** at ENS Paris-Saclay, 3 months.
Internship advisors: *Pierre-Yves Massé and Nicolas Vayatis*.
Internship subject: *Flow optimization of a metapopulation model for epidemiology*.

Publications and Preprints


Journal Articles

- F. Clément and J. Olayé, “A stochastic model for neural progenitor dynamics in the mouse cerebral cortex,” *Mathematical Biosciences*, vol. 372, Jun. 2024.  DOI: 10.1016/j.mbs.2024.109185.



Under review

- J. Olayé, H. Bouzidi, A. Aristov, S. G. Ramos, C. Baroud, and V. Bansaye, *Estimation of the lifetime distribution from fluctuations in Bellman-Harris processes*, arXiv, Feb. 2024.  DOI: 10.48550/arXiv.2402.03842.




Submitted

- J. Olayé and M. Tomasevic, *Long-time behaviour of a multidimensional age-dependent branching process with a singular jump kernel*, arXiv, Aug. 2024.  DOI: 10.48550/arXiv.2408.02476.









Preprints

- J. Olayé, *An inverse problem in cell dynamics: Recovering an initial distribution of telomere lengths from measurements of senescence times*, arXiv, Jan. 2025.  DOI: 10.48550/arXiv.2501.11998.
- P.-Y. Massé, Q. Laborde, M. Cherifa, J. Olayé, and L. Oudre, *Flow Redirection for Epidemic Reaction-Diffusion Control*, arXiv, Feb. 2022.  DOI: 10.48550/arXiv.2202.02017.



Teaching and responsibilities

- 2024 – 2025  **Co-organiser** of the Ph.D. student seminar of the CMAP.
- 2023 – 2025  **Teaching assistant** at the Bachelor of Science, 1st year, École Polytechnique.
Course: *How to Write Mathematics (LAB102)*, 64 hours.
- 2022  **Tutor** for Jacques Hadamard scholarship holders.

Communications

- 2024  **Talk:** *"Launching of the Project-team MERGE"*, Palaiseau.
-  **Talk:** *"13th European Conference on Mathematical and Theoretical Biology"*, Toledo.
-  **Poster:** *"Frontiers in Interacting Particle Systems, Aggregation-Diffusion Equations and Collective Behavior"*, Marseille.
-  **Poster:** *"Mathematical Biology: Collective Behavior and Pattern Formation"*, Marseille.
-  **Poster:** *"Conference for the 50th anniversary of the CMAP"*, Palaiseau.
-  **Talk:** *"Kick-off meeting of the PEPR Maths VivES DyLT project"*, Paris.
-  **Talk:** *"Oberseminar Analysis"*, Bonn.
-  **Talk:** *"MERGE seminar"*, Palaiseau.

Skills

- Languages  French, English.
- Coding  Python, C++, R, Matlab, Latex.