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, p. 109 185, 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.

Sumitted

- 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

- 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 supervision

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.

Skills

Languages — French, English.

Coding — Python, C++, R, Matlab, Latex.