

Mary Letey

[email](#) + [website](#) + [gscholar](#)

Education

- Now **Harvard University**, [Pehlevan Group](#)
PhD Student, Applied Mathematics
- 2023 **Perimeter Institute**
MSc, Theoretical Physics
- 2022 **University of Cambridge**
BA Honours, Mathematics

Publications & Preprints

- 2024 Yue Lu, **Mary Letey**, Jacob Zavatore-Veth, Anindita Maiti, Cengiz Pehlevan
Asymptotic theory of in-context learning by linear attention, [Preprint](#)
- 2022 **Mary Letey**, Zak Shumaylov, Fruzsina Agocs, Will Handley, Mike Hobson, Anthony Lasenby
Quantum initial conditions for curved inflating universes, [Physical Review Article](#)

Research & Work Experience

- 2023 **Montreal Institute for Learning Algorithms**, [Prof. Siamak Ravanbakhsh](#)
Applied continuous kernel CNNs to generalise neural operators of continuous input functions.
Perimeter Institute for Theoretical Physics, [Prof. Latham Boyle](#)
Master's thesis — Studied reflective symmetry in Lorentzian geometries and demonstrated substantial differences between discrete symmetry in Euclidean and Lorentzian spaces.
- 2022 **Kavli Institute for Cosmology, University of Cambridge**, [Prof. Will Handley](#)
Studied inflation in spatially-curved universes, where quantisation by standard methods is impossible. Defined a new curvature perturbation variable that follows a standard wave equation, which can be quantised with known robust methods.
- 2020 **Intern** at [Embryo Ventures](#)
Boosted startup engagement fivefold through strategic outreach and and 1-1 interviews with founders.
Research Intern at [Iguana Investments](#)
Studied algorithmic optimisations and presented their affect on investment strategy.

Awards & Funding

- 2024 **Clare Marie Doris Innovation Fund**
Harvard University
- 2023 **Graduate Prize Fellowship** **Summer Research Bursary**
Harvard University McGill University, \$4000
- 2022 **International Scholar Award** **Summer Research Bursary**
Perimeter Institute, \$45000 Royal Society, £3000

Talks & Posters

- 2024 **Poster** at [Princeton ML Theory Summer School](#)
Poster at [DIMACS Modelling Randomness workshop](#)
Opening talk about in context learning at [Kempner Institute](#)

Community & Sport

- 21— **Tutor** with [Blue Education](#) and [U2 Tuition](#) for maths, physics, and admissions
- 21—22 **Senior Coxswain** for Cambridge City Rowing Club and Lady Margaret Boat Club
- 20—22 **Publicity Officer** for the [St Johns College Mathematics Society](#)
- 19—21 **Founder & President** of the St Johns College Entrepreneurs' Club