

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 , <i>under review</i>
2022	Mary Letey , Zak Shumaylov, Fruzina Agocs, Will Handley, Mike Hobson, Anthony Lasenby Quantum initial conditions for curved inflating universes, Physical Review Article

Talks & Posters

2024	Workshop Paper at Neurips Mathematics of Modern Machine Learning Poster at Princeton ML Theory Summer School Poster at DIMACS Modelling Randomness workshop Opening talk about in context learning at Kempner Institute
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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 <i>Master's thesis</i> – 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	Harvard University
	Summer Research Bursary	McGill University, \$4000
2022	International Scholar Award	Perimeter Institute, \$45000
	Summer Research Bursary	Royal Society, £3000

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