

Mary Letey

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

Education

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| Now | Harvard University , Pehlevan Group | PhD Student, Applied Mathematics |
| 2023 | Perimeter Institute | MSc, Theoretical Physics |
| 2022 | University of Cambridge | BA Honours, Mathematics |

Publications & Preprints

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| 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 |

Talks & Posters

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| 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

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| 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

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| 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

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| 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 |