

Mary Letey

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

Education

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| Now | Harvard University | PhD Student — Applied Mathematics | Supervised by Prof. Cengiz Pehlevan |
| 2023 | Perimeter Institute | MSc — Theoretical Physics | Supervised by Prof. Latham Boyle |
| 2022 | University of Cambridge | BA Honours — Mathematics | |
| 2018 | University of Colorado | Non-degree student — Mathematics, Computer Science | |

Publications & Preprints

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| 2024 | Yue M. Lu, Mary Letey , Jacob Zavatore-Veth, Anindita Maiti, Cengiz Pehlevan Asymptotic theory of in-context learning by linear attention, Preprint , <i>submitted to PNAS</i> |
| 2022 | Mary Letey , Zak Shumaylov, Fruzsina Agocs, Will Handley, Mike Hobson, Anthony Lasenby Quantum initial conditions for curved inflating universes, Physical Review D |

Talks & Posters

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| 2024 | Workshop paper at Neurips Mathematics of Modern Machine Learning Poster at Princeton ML Theory Summer School and DIMACS Modelling Randomness workshop Opening talk about in context learning at Kempner Institute |
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Research & Work Experience

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| 2025 | Harvard Applied Mathematics Department Teaching Fellow for AM50 |
| 2023 | Montreal Institute for Learning Algorithms (MILA) — Supervised by Prof. Siamak Ravanbakhsh Studied extensions of equivariance to neural operators to implement Lie point symmetries. Perimeter Institute for Theoretical Physics — Supervised by Prof. Latham Boyle <i>Master's thesis</i> — Studied reflection groups acting on Lorentzian geometries to classify spacetime discretisations. |
| 2022 | Perimeter Institute Quantum Intelligence Lab — Supervised by Prof. Roger Melko Investigated noise sensitivity for physics-informed neural network simulations of neutral atom arrays. Kavli Institute for Cosmology, Cambridge — Supervised by Dr. Will Handley Extended inflation calculations to universes with spatial curvature; defined novel variable for quantisation. |
| 2020 | Embryo Ventures Boosted startup engagement fivefold through outreach, 1-1 interviews with founders, and community pitches. 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, \$4,000 |
| 2022 | International Scholar Award | Perimeter Institute, \$45,000 |
| | Summer Research Bursary | Royal Society, £3,000 |

Community & Sport

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| 21 — 24 | Tutor with Blue Education and U2Tuition 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 |