Mara-Ioana Postolache

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Nationality: Romanian
Languages: Romanian (native), English (fluent), German (basic)

Current position

PhD Student, School of Mathematical Sciences, Queen Mary University of London
Supervised by Huy The Nguyen and Shengwen Wang.

Areas of specialisation

Geometric Analysis; Mean Curvature Flow; Minimal Surfaces

Education

2025-NOW PHD, School of Mathematical Sciences, Queen Mary University of London
2024-2025 MMATH (Distinction), Mathematical Tripos, University of Cambridge
2021-2024 BA (Upper Second Class Honours), Mathematical Tripos, University of Cambridge

Publications

PRE-PRINTS

2024 *"Hénon maps with many rational periodic points"* (with Hyeonggeun Kim, Holly Krieger, and Vivian Szeto), https://arxiv.org/abs/2412.01668

Talks

OCT 2025 *An Introduction to Mean Curvature Flow*, Queen Mary Internal Postgraduate Seminar
MAR 2025 *Otto Calculus and Gradient Flows on the Manifold of Probability Measures*, Tomorrow's Mathematicians Today Conference
DEC 2024 *An Introduction to Mean Curvature Flow*, Part III Seminar Series
OCT 2024 *Otto Calculus and Gradient Flows on the Infinite-Dimensional Manifold of Probability Measures*, Summer Research Festival
JUN 2024 *The X-Ray Transform and Geometric Inverse Problems*, Archimedeans Talks
AUG 2023 *Polynomials with many Rational Preperiodic Points*, CMP Presentation Day

Conferences and workshops

Jan 2026 *ICMS Winter School: PDE in Geometry and Analysis*, Edinburgh
Sep 2025 *British Isles Graduate Workshop VI*, Isle of Wight

Other academic

PART III ESSAY

2025 *Manifolds with Non-negative Scalar Curvature*, supervised by Paul Minter
A literature review about how the topology of a manifold influences which scalar curvatures it admits. Main topics covered include Kazdan-Warner's trichotomy for the prescribed scalar curvature problem, and Schoen-Yau's study of manifolds admitting positively scalar curved metrics, culminating in a proof of the Geroch conjecture for dimensions up to 7.

RESEARCH PROJECTS

2024 *Infinite-dimensional geometry of diffusions*, supervised by Clément Mouhot and Amélie Loher
A summer project reading about Otto calculust, which endows the space of probability measures with a Riemannian structure in such a way that the porous medium equation can be seen as a gradient flow of a nice entropy functional. Funded by the Summer Research in Maths (SRIM) programme.

2023 *Polynomials with many rational preperiodic points*, group project with Hyeonggeun Kim and Vivian Szeto, supervised by Holly Krieger
A group summer project studying the dynamics of polynomials under iteration. Funded by the Philippa Fawcett Internship programme. Resulted in a pre-print.

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