

Education

2024-X Ph.D. studies, University of Oxford and Max Planck Institute for Mathematics in the Sciences, supervised by Cornelia Druțu and Anna Wienhard.

2023/24 Master of Science in Mathematical & Theoretical Physics, with distinction, University of Oxford.

2022/23 Bachelor of Science in Mathematics, Heidelberg University.

2019-23 Bachelor of Science in Physics, Heidelberg University.

Research

[HMM26] Paula Heim, Joseph MacManus und Lawk Mineh. "Realising all countable groups as quasi-isometry groups". In: *arXiv preprint arXiv:2601.06261* (2026).

[DHT25] Jacek Dobrzyniecki, Paula Heim und Michał Tomza. "Tunable two-species spin models with Rydberg atoms in circular and elliptical states". In: *Physical Review Research* 7 (2025), S. 013321.

Invited Talks

11/2025 *QI groups and QI rigidity* DAGGER Seminar, University of Warwick

11/2025 *QI groups and QI rigidity* Junior Topology and Group Theory Seminar, University of Oxford

08/2025 *Classical complex analytic theory of universal Teichmüller space* Workshop on Universal Teichmüller Theory in Aussois

04/2025 *Rigidity of self-maps of rank-one symmetric spaces* Seminar Groups and Actions, Paris-Saclay

02/2025 *Rigidity of quasiisometries in rank-one symmetric spaces*, Bristol Junior Geometry Seminar, University of Bristol

02/2025 *Rigidity of quasiisometries in rank-one symmetric spaces*, Junior Topology and Group Theory Seminar, University of Oxford

12/2024 *Beyond Euclidean Geometry - SubRiemannian Manifolds and their distance functions*, Graduate Talks, Merton College, University of Oxford

Pre-Ph.D. Research Experience

10/23-11/24 Extension of my summer project on quantum simulation with ultracold Rydberg atoms with Jacek Dobrzyniecki and Michał Tomza [DHT25], available [here](#).

05/2024 Dissertation on “*Quasiisometric Rigidity in Rank-One Symmetric Spaces à la Pansu*”, supervised by Cornelia Druțu, available [here](#).

07-09/2023 Research Internship on “*Quantum Simulator with Circular Rydberg Atoms*” at the University of Warsaw under the supervision of Michał Tomza, report available [here](#).

09/2023 Bachelor’s Thesis in Mathematics on “*The Visual Boundaries of Hyperbolic Spaces*”, supervised by Beatrice Pozzetti and Max Riestenberg, available [here](#).

07/2023 Bachelor’s Thesis in Physics on “*Lee-Yang Theorem à la Lieb-Sokal*”, supervised by Manfred Salmhofer, available [here](#).

Teaching Experience

HT 2025 Tutor for Part A Topology (St. Edmund Hall, University of Oxford)

MT 2024 Teaching Assistant for Topology and Groups (University of Oxford)

Summer 2023 Tutor for Differential Geometry (Heidelberg University)

Summer 2022 Tutor for Theoretical Physics (Heidelberg University)

Winter 2020/22 Tutor for Linear Algebra I (Heidelberg University)

Summer 2021 Tutor for Linear Algebra II (Heidelberg University)

Winter 2020/21 Tutor for Linear Algebra I (Heidelberg University)