Thomas Sachen
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Education

➔ **Scuola Normale Superiore** Pisa, IT
PhD in Logic & Philosophy of Mathematics *2024 - 2027*

- HuME (The Human Mind and its Explanations: Language, Brain and Reasoning) scholarship
- Joint with the University of Milan and IUSS Pavia

➔ **Princeton University** Princeton, NJ, USA
A.B. in Mathematics *2004 - 2009*

- Thesis Title: *p-adic Hodge Theory and derived-Hodge-to-de-Rham spectral sequences*; advised by Bhargav Bhatt
- Sigma Xi Honors Society

Research Activity

➔ **Scuola Normale Superiore**, HuME PhD Scholarship, 2024-2027.

- Philosophy of mathematics. Advisors: Mario Piazza, Gabriele Pulcini.

➔ **Princeton University**, Undergraduate Research Grant, 2022-2023.

- p-adic Hodge theory. Advisors: Bhargav Bhatt, Chenyang Xu.

➔ **Tufts University**, NSF REU Grant, 2021.

- Computational geometric group theory. Advisors: Kim Ruane, Genevieve Walsh, Lorenzo Ruffoni

➔ **Georgia Institute of Technology**, NSF REU grant, 2020.

- Knot Concordance. Advisor: Junghwan Park.

➔ **Notre Dame University**, Geometry & Topology RTG, 2019.

- Knot theory. Advisors: Marc Behrens, Juanita Pinzón Caicedo.

➔ **University of Chicago**, Stone Edge Observatory Internship, 2019.

- Astrophysics data science. Advisors: Marc Berthoud, Kate Meredith.

Publications & Professional Activity

- **Concordances of sums of alternating torus knots and their mirrors to L-space knots** (joint with Dan Guyer). Accepted, to appear in *Knot Theory and its Ramifications*. arXiv:2210.08055 and poster.
- *Geometric Techniques in Topological Data Analysis: Toward Persistent Hodge Theory (slides).* Arete, Northridge, CA, September 2023.
- ***p*-adic Hodge Theory and derived-Hodge-to-de-Rham spectral sequences** (joint with nil). Princeton Senior thesis. (link)
- **Classifying Brieskorn Varieties and Brieskorn Manifolds** (joint with nil). Princeton Junior thesis. (link)
- *Concordances of linear combinations of Torus knots to L-space knots.* (link), Joint Mathematics Meeting, AMS. April 2022
- *Classifying Finitely Presented Infinite Groups.* (link), Joint Mathematics Meeting, AMS. April 2022
- *Geometric Aspects of Growth of Finitely Generated Groups (video).* REU Vir(tu)al Conference 2021, University of Connecticut, August 2021.