Thomas Sachen

tomsachen@protonmail.com // tomsachen.github.io
(262) 914-8590

Education

- Princeton University, 2023
  - ↳ A.B. in Mathematics; *Cum Laude, Sigma Xi*
  - ↳ Thesis: *p-adic Hodge Theory and derived-Hodge-to-de-Rham spectral sequences*, advised by Bhargav Bhatt

Research experience

- Princeton University, 2021-2023
  - ↳ algebraic geometry + topology
- Tufts University, Summer 2021
  - ↳ computational group theory
- Georgia Inst. of Technology, Summer 2020
  - ↳ knot theory + low-dimensional topology
- The University of Chicago, 2018
  - ↳ astrophysics data processing

Other experience

- WPRB FM, 2019-2023
  - ↳ station manager + music director
- Chaos Computer (Brooklyn), 2022-2023
  - ↳ volunteer organizer + tech. support (experimental arts collective)
- Princeton Math dept., 2021-2023
  - ↳ mathematics tutor + grader

⇝

Related skills:

- Python, Javascript, Wolfram, MATLAB, CAD
- expertise in geometry + topology
- data science algorithms + visualization
- spatial reasoning, creative problem solving
- collaborative research, technical communication

⇝

Related skills:

- demonstrated leadership + project management
- strong interpersonal skills
- music composition + performance
- art + technology integration

Related Work (more at tomsachen.github.io)

6. *Geometric Techniques in Topological Data Analysis: Toward Persistent Hodge Theory* (slides) Areté, Northridge, CA. Sep. 2023
5. p-adic Hodge Theory and derived-Hodge-to-de-Rham spectral sequences. Senior Thesis. (link)
4. Classifying Brieskorn Varieties and Brieskorn Manifolds. Junior Thesis. (link) presented at Princeton Riemann Surfaces seminar, May 2022
3. Concordances of sums of alternating torus knots and their mirrors to L-space knots. (link). (poster). Submitted. April 2022
2. A Survey of Knot Concordance and L-space knots. 2021. (link)
1. *Geometric Aspects of Growth of Finitely Generated Groups (video).* REU Vir(tu)al Conference 2021, University of Connecticut, August 2021.