

Thomas Sachen

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🌐 tomsachen.github.io

I'm a mathematician with strong quantitative and research skills. I aim to apply my expertise to hard, impactful problems in quantitative research, quantitative development, and data science.

Education

09/18–05/23 **A.B. in Mathematics**, *Princeton University*, Princeton, NJ
Honors: Sigma Xi Honor Society

Skills

Programming: Python, MATLAB, SQL, R, JavaScript
Data: Topological data analysis, statistical analysis, numerical methods
Mathematics: Advanced mathematics, research, technical communication
Professional: Leadership, analytical thinking, project management, art + technology integration

Research Experience

05/22–05/23 **Undergraduate Researcher**, *Princeton University*, Princeton, NJ
Arithmetic geometry, topological data analysis. Produced two theses, presented at Princeton's Algebraic Geometry seminar.

05/21–09/21 **NSF REU Researcher**, *Tufts University*, Medford, MA
Computational methods in geometric group theory. Presented work at several conferences.

05/20–09/20 **NSF REU Researcher**, *Georgia Institute of Technology*, Atlanta, GA
Low-dimensional topology, knot concordance. Published a paper, presented at several conferences.

02/18–09/18 **Stone Edge Observatory Intern**, *The University of Chicago*, Chicago, IL
Astrophysics image data processing. Our interface and data pipeline was used by UChicago researchers to remotely operate a telescope.

Professional Experience

10/23– **Freelance Advanced Math/CS Expert**, *Scale AI*, Remote
Contracted to write and review advanced math and Python programming prompts for LLM training

08/22–05/23 **Tutor, Coordinator**, *Princeton Math Department*, Princeton, NJ
Tutored advanced math courses, organized departmental talks

01/21–12/22 **Station Manager, Music Director**, *WPRB Princeton*, Princeton, NJ
Managed a staff of 40+ and a multi-million dollar endowment for a community radio station. Led several \$100,000+ fundraising campaigns, executed both long-term plans and day-to-day operations.

05/20–09/21 **Grader, Teaching Assistant**, *Art of Problem Solving*, Remote
Provided educational support for advanced high school students in math and Python programming.

Additional Information

Personal projects, publications, and talks available at tomsachen.github.io. For example:

Presentation [Here](#) is a recent talk I gave on geometric and topological data analysis.

Paper *Concordances of sums of alternating torus knots and their mirrors to L-space knots* is a recent paper in knot theory, accepted for publication.

Project [toroscillator_](#) is an applet that models sound waves as torus knots.