Peiqi Yang

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EDUCATION

- **George Washington University** — Washington, DC
  PhD Candidate, Department of Mathematics — *Aug 2019 - Aug 2025 (Expected)*
  Advisor: Hao Wu   Grade: 3.94/4.00
  Research Interests: Algebraic Topology, Graph Theory, Topological Data Analysis, Manifold Searching and Machine Learning.

- **University of Science and Technology of China** — Hefei, China
  Bachelor of Science, School of Mathematical Science — *Sep 2014 - May 2018*

RESEARCH

- **Adaptive Stochastic Gradient Descents on Manifolds with an Application on Weighted Low-Rank Approximation**
  Peiqi Yang, Conglong Xu, Hao Wu — Preprint

- **Weighted Low-rank Approximation via Stochastic Gradient Descent on Manifolds**
  Conglong Xu, Peiqi Yang, Hao Wu — Preprint

- **Decomposition of Persistent Homology and Spectral Sequence**
  Peiqi Yang, Yingfeng Hu, Hao Wu — Submitted

EXPERIENCE

- **Mathematical Sciences Research Institute** — Moraga, CA
  Institutional Student Representative - MSRI Summer Graduate Workshop — *July 2022 - Aug 2022*
  - **Topological Methods for the Discrete Mathematician**
    Progress in the field of topological methods in discrete mathematics has been rapid and has generated a lot of activity with the resolution of major open problems, the emergence of new lines of inquiry, and the development of new tools. Discussed open problems and shared ideas with members coming from different mathematical research areas.

- **George Washington University** — Washington, DC
  Instructor — *July 2021 - Aug 2021*
  - **Multivariable Calculus**
    Led a full-time summer session course. Taught multivariable calculus included vector calculus, partial derivatives, multiple integrals, Green's theorem and Stokes' theorem. Received high feedback from the students.

- **George Washington University** — Washington, DC
  Teaching Assistant — *Sep 2019 - Present*
  - **Calculus and Linear Algebra**
    Assisted courses in Single-/Multi-variable Calculus and Linear Algebra. Taught recitations, held office hours and graded exams.
  - **Mathematical Reasoning**
    Graded and written comments to students proofs with LaTeX. Helped students write better mathematical proof in a fluent logical order.

CONFERENCES AND TALKS

- **Knots in Washington 50** — George Washington University, DC
  Attendee — *Dec 2024*

- **Knots in Washington 49.96875** — George Washington University, DC
  *Talk: **Decomposition of Persistent Homology and Spectral Sequence*** — *Dec 2023*

- **Graduate Students Seminar** — George Washington University, DC
  *Talk: **KKM-Type Theory and Intersection Patterns*** — *Oct 2022*

- **Research Seminar** — George Washington University, DC
  *Talk: **Computational Algebraic Geometry and Hilbert Polynomials*** — *Mar 2021*

- **SIAM Conference on Applied Algebraic Geometry** — Georgia Institute of Technology, GA
  Attendee — *July 2017*

- **Undergraduate Research Program** — University of Science and Technology of China, China
  *Talk: **The Structure of Electrical Lie Algebra*** — *Oct 2015*

Honors and Awards

- James H. Taylor Graduate Mathematics Prize 2025.

- Nominated for Philip Amsterdam Graduate Student Teaching Awards 2024.

- Team Bronze Medal in S.T.Yau College Student Mathematics Contests 2017.

- Honorable Mention in Mathematical Contest in Modeling 2017.

- Awards for Brilliant Students by USTC in 2015.

- 1st Award in High School Math Olympiad of China in 2013.

Skills

- **Programming and Script Languages**
  Python, C++, C, SQL, LaTeX
- **Tools**
  Pytorch, Matlab, Macaulay2, Ripser
- **Languages**
  Chinese, English, Japanese(read and listen)