

Joshua Xu Wang

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EDUCATION

Harvard University , Cambridge, MA Ph.D. in Mathematics (expected 2023) Advisor: Peter Kronheimer	2018 – Present
Princeton University , Princeton, NJ A.B. in Mathematics, Highest Honors Senior Thesis advisor: Zoltán Szabó	2014 – 2018

PUBLICATIONS AND PREPRINTS

7. The Gysin sequence and the $\mathfrak{sl}(N)$ homology of $T(2,m)$	arXiv:2212.14499
6. Colored $\mathfrak{sl}(N)$ homology and $SU(N)$ representations of the trefoil	arXiv:2211.08409
5. Split link detection for $\mathfrak{sl}(P)$ link homology in characteristic P <i>Journal of Topology</i> , accepted	arXiv:2112.09110
4. On $\mathfrak{sl}(N)$ link homology with mod N coefficients <i>Quantum Topology</i> , accepted	arXiv:2111.02287
3. Link Floer homology also detects split links <i>Bulletin of the London Mathematical Society</i> 53(4):1037-1044 (2021)	arXiv:2009.09345
2. The cosmetic crossing conjecture for split links <i>Geometry & Topology</i> 26(7):2941-3053 (2022)	arXiv:2006.01070
1. A combinatorial proof of invariance of double-point enhanced grid homology with Timothy Ratigan and Luya Wang	arXiv:1810.03202

AWARDS AND FELLOWSHIPS

Merit Research Fellowship, <i>Harvard University</i>	2022 – 2023
Derek C. Bok Award, <i>Harvard University</i>	2022
Certificate of Distinction in Teaching, <i>Harvard University</i>	2021
NSF Graduate Research Fellowship Program	2019 – 2022
George B. Covington Prize in Mathematics, <i>Dept of Mathematics, Princeton University</i>	2018
Peter A. Greenberg '77 Prize, <i>Dept of Mathematics, Princeton University</i>	2017
Shapiro Prize for Academic Excellence, <i>Princeton University</i>	2016

CONFERENCE AND WORKSHOP TALKS

CMI Gauge Theory and Topology	July 2023
ICTP Frontiers in Geometry and Topology Research Conference	Aug 2022
FRG Workshop on Gauge Theory in Miami, Florida	Apr 2022
AMS Special Session on Gauge Theory, Geometric Analysis, and Low-Dimensional Topology	Mar 2022
BIRS Workshop Interactions of gauge theory with contact and symplectic topology in dimensions 3 and 4	Mar 2022
ICERM Foam Evaluation Workshop	Nov 2021
JMM AMS Special Session on Low Dimensional Topology, I	Jan 2021

INVITED SEMINAR TALKS

California Institute of Technology, Geometry & Topology Seminar	Apr 2023
Princeton University, Topology Seminar	Mar 2023

UC Davis, Algebraic Geometry Seminar	Mar 2023
Columbia University, Symplectic Geometry, Gauge Theory, and Categorification Seminar	Feb 2023
University of Georgia, Topology Seminar	Apr 2022
Boston College, Geometry/Topology/Dynamics Seminar	Feb 2022
University of Oregon, Topology/Geometry Seminar	Feb 2022
University of Warsaw, Knot Theory Seminar	Dec 2021
Stony Brook University/Simons Center for Geometry and Physics Low-Dimensional Topology, Gauge Theory, and Symplectic Geometry Seminar	Nov 2021
Boston Graduate Topology Seminar	Nov 2021
Princeton University, Topology Seminar	Sep 2021
Gauge Theory Virtual Seminar	Apr 2021
Washington University in St. Louis, Geometry and Topology Seminar	Apr 2021
UC San Diego, Topology Seminar	Mar 2021
Stanford University, Topology Seminar	Oct 2020
Michigan State University, Geometry and Topology Seminar	Oct 2020
Virginia Commonwealth University, Geometry and Topology Seminar	Oct 2020
Max Planck Institute for Mathematics, Topology Seminar	Jun 2020

TEACHING

Multivariable calculus, <i>Harvard University</i> Taught one class in a coordinate course, overall student evaluation: 4.88/5	Fall 2021
MSRI Summer Graduate School: Gauge Theory in Geometry and Topology Served as a teaching assistant for a course taught by Boyu Zhang	Summer 2021
Tutorial: Low-dimensional manifolds, <i>Harvard University</i> Designed the course, prepared and gave 24 lectures	Spring 2021
Tutorial: Differential forms in algebraic topology, <i>Harvard University</i> Designed the course, prepared and gave 24 lectures	Summer 2020
Tutorial: Knot invariants and category theory (with Morgan Opie), <i>Harvard University</i> Co-designed the course, prepared and gave 6 lectures	Summer 2019

SERVICE AND ORGANIZATION

Refereeing: <i>Compositio Mathematica</i> , <i>Journal of the European Mathematical Society</i>	2021 – Present
Harvard University Gauge Theory and Topology Seminar Co-organizer of the weekly research seminar	2022 – Present
Directed Reading Program at Harvard University Co-founder and co-organizer, mentored five reading projects with undergraduates	2018 – 2022
Nearly Carbon Neutral Geometric Topology Conference (NCNGT) Co-organized a session titled “Recent techniques in Floer and Khovanov homology”	2021