Albert Jinghui Yang

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Research interests

Algebraic topology, with a particular emphasis on homotopy theory, especially computations in stable homotopy theory, equivariant (stable) homotopy theory, and the motivic homotopy theory.

Education

2023 – Present **University of Pennsylvania** – Philadelphia, PA
Ph.D. in Mathematics
Advisor: Mona Merling, XiaoLin Danny Shi

2021 – 2022 **University of Oxford** – Oxford, United Kingdom
M.S. in Mathematics
Thesis: *Homotopy Groups of Spheres in Homotopy Type Theory*.

2018 – 2021 **University of Illinois, Urbana Champaign** – Urbana, IL
B.S. in Mathematics, magna cum laude
Advisor: Randy McCarthy

Publications and Preprints

1. **The $RO(C_2)$-graded Hurewicz image of Atiyah's Real K-theory,**
with Sihao Ma, XiaoLin Danny Shi, Zhouli Xu, and Shangjie Zhang. Submitted. arXiv: 2610.19606.
2. **A Hurewicz theorem for $RO(C_2)$-graded equivariant homology governed by vector fields on spheres,**
with Manyi Guo, Guchuan Li, Yunze Lu, Sihao Ma, Yuchen Wu, Zhouli Xu, and Shangjie Zhang. Submitted. arXiv: 2605.26334.
3. **Immersions of C_2-projective spaces via $K\mathbb{R}$-theory,**
with Manyi Guo, Jackson Morris, Alexander Waugh. Submitted. arXiv: 2604.25260.
4. **Very effective algebraic and hermitian K-theory of the cyclic group of order two,**
with Prerna Dhankhar, Rebecca Field, Arjun Nigam, and J.D. Quigley. To appear in ***Annals of K-Theory***. arXiv: 2509.25006.

Honors and Scholarships

2023 Benjamin Franklin Scholarship (University of Pennsylvania)

2021 Most Outstanding Undergraduate Major Award in Mathematics (University of Illinois, Urbana Champaign)

Teaching

Fall 2026 **TA**, Math 1410: Calculus, Part II.

Summer 2025 **TA**, Math 2400: Calculus, Part III.

Spring 2025 **TA**, Math 3610: Advanced Calculus II.

Fall 2024 **TA**, Math 6000: Topology and Geometric Analysis.

Talks

Jan 2027 **Machine Computation of the Slice Spectral Sequence of a C_8-equivariant height-4 Lubin-Tate theory**
Joint Mathematics Meetings (JMM), Chicago.

Nov 2026 **Machine Computation of the Slice Spectral Sequence of a C_8-equivariant height-4 Lubin-Tate theory**
AMS Sectional Meetings, Arizona State University.

Oct 2026 **On the Non-existence of the Kervaire Invariant Elements in the Equivariant Slice Spectral Sequence**
Topology Seminar, University of Washington.

Oct 2026 **On the Non-existence of the Kervaire Invariant Elements in the Equivariant Slice Spectral Sequence**
MathAImathics Seminar, University of Pennsylvania.

June 2026 **Machine Computation of the Slice Spectral Sequence of a C_8-equivariant height-4 Lubin-Tate theory**
Machine Computation in Homotopy Theory, ICERM, Brown University.

Jan 2026 **Bousfield-Kan Spectral Sequence**
DubTop Seminar, University of Washington.

Oct 2025 **Motivic classifying spaces**
DubTop Seminar, University of Washington.

Feb 2025 **Intro to motivic homotopy theory**
AMTRaK (Atlantic Meeting on Topology, Representation theory, and K-theory) seminar, University of Virginia.

Feb 2025 **Tensor-triangulated geometry**
University of Pennsylvania Graduate Topology/Geometry Seminar.

Nov 2024 **Topological cyclic homology of local fields**
Fall 2024 eCHT Kan Seminar.

Sep 2024 **Introduction to equivariant homotopy theory**
AMTRaK (Atlantic Meeting on Topology, Representation theory, and K-theory) seminar, University of Pennsylvania.

Aug 2024 **The cyclotomic trace and Dundas-Goodwillie-McCarthy theorem**
2024 Talbot, TX.

Jun 2024 **Goerss-Hopkins obstruction theory**
University of Pennsylvania.

Feb 2024 **From exotic spheres to stable homotopy theory**
University of Pennsylvania Graduate Topology/Geometry Seminar.

Nov 2023 **The trace method in algebraic K-theory**
2023 BUGCAT Conference, Binghamton University.

Service

June 2026 **2026 UW Math Olympiad (Judge)**
University of Washington. For Grade 6–10.

March 2026 **2026 USAMO & USAJMO (Proctor)**
University of Washington site. Help proctor exams with the sector coordinator XiaoLin Danny Shi.

Spring 2026 **Motivic Computations in K-theory Seminar (Co-organizer)**
online. URL: https://maroon-scorch.github.io/mck-2026/

Fall 2025 **eCHT secondary Steenrod algebra reading seminar (TA)**
online. URL: https://s.wayne.edu/echt/echt-reading-seminars/echt-secondary-steenrod-algebra-reading-seminar-fall-2025/

Fall 2025 **Seminar on Computational Methods in Algebraic K-theory (Co-organizer)**
online. URL: https://maroon-scorch.github.io/cmak-2025/

Summer 2025 **Seminar on Motivic Homotopy Theory (Co-organizer)**
online. URL: https://kclo3-naoh.github.io/Motivic.html

2024 – 2025 **Graduate Student Geometry-Topology Seminar (Organizer)**
University of Pennsylvania.

Summer 2022 **Seminar on Homological Mirror Symmetry (Co-organizer)**
Mathematical Institute, University of Oxford, United Kingdom.
URL: https://kclo3-naoh.github.io/HMS.html

Technical Skills

Programming languages
Proficient in: LaTeX, JAVA, HTML 5, C, Python

Languages
English (fluent), Mandarin (native speaker), French (Intermediate), Japanese (Intermediate)