Albert Jinghui Yang

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Research interests

Homotopy theory, especially stable homotopy theory, equivariant (stable) homotopy theory, chromatic homotopy theory, and their connections to algebraic K-theory, topological cyclic homology.

Education

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

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
Advisor: Randy McCarthy

Honors and Scholarships

2023 Benjamin Franklin Scholarship (University of Pennsylvania)

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

Events

Sep 2024 - Present **Reading Seminar on Infinity Categories**, University of Pennsylvania
• Mentor: Mona Merling.
• Lectures: Universal Characterization of Algebraic K-theory.

May 2022 - Present

Reading Seminar on Homotopy Theory (Remote), Fudan University, China

- Mentor: Guozhen Wang.
- Lecture (Mar 2024): *J-homomorphism*.
- Lecture (Dec 2022): *Thick subcategory theorem in chromatic homotopy theory*.
- Lecture (Aug 2022): *Simplicial theory, Quillen's theorem A and B*.

Jan 2024 - May 2024

Reading Seminar on Equivariant Homotopy Theory, University of Pennsylvania

- Mentor: Mona Merling.
- Lectures: Equivariant spaces, Elmendorf's theorem, Smith theory, Atiyah Real K-theory, slice spectral sequence.

Sep 2023 - Dec 2023

Reading Seminar on Topological Hochschild Homology and Trace Method, University of Pennsylvania

- Mentor: Mona Merling.
- Lecture (Nov 2023): *Classical approach to cyclotomic trace and the comparison to the new approach*.

Sep 2023 - Dec 2023

Reading Seminar on Algebraic K-theory, University of Pennsylvania

- Mentor: Danny Krashen.
- Lecture (Nov 2023): *Q-construction and ∞-categorical analogue and basic theorems*.
- Lecture (Oct 2023): *Quillen's +-construction, Barratt-Priddy theorem, and K-theory of finite fields*.

Jun 2020 - Oct 2020

Research Experiences for Undergraduates, University of Chicago

- Mentors: Peter May, Hana Jia Kong.
- Title: *Algebraic K-theory and trace method*.

Teaching

Fall 2024

TA, University of Pennsylvania

- Fall 2024, Math 6000: Topology and Geometric Analysis.

Talks

Nov 2024

TBA

University of Pennsylvania Graduate Topology/Geometry Seminar.

Nov 2024 **The computation of $\mathrm{THH}(\mathbb{Z}_p)^\wedge_p$ and more**
Fall 2024 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

Sep 2024 - Present **Graduate Student Geometry-Topology Seminar (Organizer)**
University of Pennsylvania.

Jun - Sep 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)