Yu (Leon) Liu

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`https://leon2k2k2k.github.io`

January 8, 2024

Education

- **Harvard University** — August 2021 - Present
  Ph.D. in Mathematics
- **The University of Texas at Austin** — August 2017 - December 2020
  B.S. in Mathematics

Papers and Preprints

- **A braided monoidal $(\infty, 2)$-category of Soergel bimodules** — January 2024
  with Aaron Mazel-Gee, David Reutter, Catherina Stroppel, and Paul Wedrich.
- **Topological aspects of brane fields: solitons and higher-form symmetries** — November 2023
  with Salvatore D. Pace.
- **A long exact sequence in the symmetry breaking** — September 2023
  with Arun Debray, Sanath Devalarpurker, Cameron Krulewski, Natalia Pacheco-Tallaj, and Ryan Thorngren
- **Constructing the Virasoro groups from differential cohomology** — December 2021
  with A. Debray, C. Weis. — *IMRN*
- **Abelian duality in topological field theory** — December 2021
  Comm. Math. Phy

Services

- **Trivial Notions** — Fall 2023 - Spring 2024
  Co-organized Harvard's standard graduate student seminar
- **DRP mentorship** — Spring 2023
  Mentor two undergrad on SUSY field theories
- **Topological order seminar** — Fall 2022
  Organized joint Harvard/MIT seminar on topological order.
- **DRP mentorship** — Fall 2022
  Mentor one math undergrad and 3 physics undergrads
- **Reflection posivity seminar** — Spring 2022
  Co-organized an online seminar on Freed-Hopkins' invertible phases paper.
- **DRP mentorship** — Fall 2021
  Mentor two undergrads in TQFT

Teaching

- **M292Z CA** — Fall 2023 / Harvard
  Course assistant for Prof. Mike Hopkin's First steps in infinity categories
- **M262A CA** — Fall 2023 / Harvard
  Course assistant for Prof. Dan Freed's Quantum field theory from the geometric viewpoint
- **M1b TF** — Spring 2023 / Harvard
  Teaching an entire section on second course of calculus
- **M132b CA** — Spring 2023 / Harvard
  Course assistant for Prof. Mike Hopkin's differential topology

Research talks, Posters

- **Stratification in physical systems** — November 2023 / UMass Amherst
  Amherst topology seminar

- **A long exact sequence in symmetry breaking**
  CMSA quantum matter in math and physics
  November 2023
  Harvard CMSA

- **E_n algebras in m-categories**
  Purdue Topology seminar
  August 2023
  Purdue

- **A long exact sequence in symmetry breaking (Poster)**
  Courcher summer school on quantum entanglement and topology
  May 2023
  CUHK

- **Abelian duality in topological field theories**
  Topological orders and category theory seminar
  March 2023
  TsingHua and SUSTech

- **A braided monoidal $(\infty, 2)$ category of Soergel bimodules**
  NEAT MAPS
  March 2023
  Northwestern

- **Symmetry breaking and crystalline phase**
  APS March Meeting
  March 2023
  Las Vegas

- **Stratification in Physical Systems**
  UCLA Algebraic Topology seminar
  Nov 2022
  UCLA

- **Long exact sequence in the symmetry breaking (Poster)**
  Global Categorical Symmetry
  June 2022
  Perimeter Institute

- **Virasoro and Differential Cohomology**
  GSTGC 2022
  March 2022
  Georgia Tech