Daigo Ito

Curriculum Vitae

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https://daigoi.github.io/

Research interests	Derived categories of coherent sheaves, birational geometry, tensor triangular geometry, homological mirror symmetry

Education

University of California, Berkeley	Berkeley, CA
Ph.D. in Mathematics	August 2021 – May 2026 (expected)
Advisor: David Nadler	

Princeton University	Princeton, NJ
A.B. in Mathematics	September 2017 – May 2021
Advisor: János Kollár, Coadvisor: Joaquín Moraga	

Honors and fellowships

Simons Foundation Fellowship (Department of Mathematics, UC Berkeley)	2025
Summer Grant Award (Department of Mathematics, UC Berkeley)	2024
Phi Beta Kappa, Beta Chapter of New Jersey (Princeton University)	2021

Publications

1. **A new proof of the Bondal-Orlov reconstruction using Matsui spectra** (with Hiroki Matsui), *Bull. Lond. Math. Soc.*: Volume 57, Issue 7 (2025), arXiv version.

Preprints

4. **Geometric construction of quiver tensor Products** (with John S. Nolan), arXiv:2510.05277 (2025).

3. **A derived category analogue of the Nakai–Moishezon criterion** (with Noah Olander), arXiv:2507.17681 (2025), submitted.

2. **Polarizations on a triangulated category**, arXiv:2502.15621 (2025), submitted.

1. **Gluing of Fourier-Mukai partners in a triangular spectrum and birational geometry**, arXiv:2309.08147 (2023), submitted.

Teaching

Graduate student instructor (University of California, Berkeley)

Math 16A: Analytic Geometry and Calculus	Fall 2024
Math 1B: Calculus	Spring 2024
Math 1B: Calculus	Fall 2023
Math 1B: Calculus	Fall 2022
Math 54: Linear Algebra and Differential Equations	Spring 2022
Math 1B: Calculus	Fall 2021

Mentoring	**Directed reading program (University of California, Berkeley)**
	Nathan Han (ongoing) (topics: Introduction to algebraic curves) — Fall 2025
	Nathan Mann (topics: Introduction to algebraic geometry and 27 lines) — Spring 2025
	Junchang Wang (topics: Riemann surfaces and scheme theory) — Fall 2024
	Vivasvat Vatatmaja (topics: Derived category on an elliptic curve) — Spring 2024
	Vivasvat Vatatmaja (topics: Model categories and $\mathbb{A}^1$-homotopy theory) — Spring 2023

Research talks

Conferences & Workshops

- *AMS 2026 Spring Eastern Sectional, Special Session on Derived Categories, Stability Conditions, and Homological Mirror Symmetry* (upcoming)
  Boston College, USA — March 2026
- *Joint Mathematics Meetings (JMM) 2026, Special Session on Moduli of Surfaces* (upcoming)
  Washington, D.C., USA — January 2026
- *Western Algebraic Geometry Symposium* (flash talk)
  University of Oregon, USA — November 2025
- *Derived Representation Theory and Triangulated Categories*
  Aristotle University of Thessaloniki, Greece — June 2025
- *Triangulated Categories in Algebra and Geometry*
  Charles University and Czech Academy of Sciences, Czechia — September 2024
- *Simple-mindedness, Silting and Stability* (flash talk)
  Lancaster University, UK — July 2024
- *Classifications of Subcategories of Abelian and Triangulated Categories*
  Tokyo University of Agriculture and Technology, Japan — June 2024

Seminars

- *UCLA Algebra Seminar* (upcoming) — November 2025
- *Stony Brook Algebraic Geometry Seminar* (upcoming) — November 2025
- *University of Washington Algebra and Algebraic Geometry Seminar* — October 2025
- *UC Berkeley Commutative Algebra and Algebraic Geometry Seminar* — October 2025
- *Utah Algebraic Geometry Seminar* — September 2025
- *UC Berkeley Commutative Algebra and Algebraic Geometry Seminar* — October 2024
- *Tokyo-Nagoya Algebra Seminar* — June 2024
- *UC Berkeley Commutative Algebra and Algebraic Geometry Seminar* — October 2023

Poster presentations

- *Workshop on Mirror Symmetry and Related Topics* (upcoming)
  Kyoto University, Japan — December 2025
- *Western Algebraic Geometry Symposium*
  University of Oregon, USA — November 2025
- *Workshop on Derived Categories, Noncommutative Geometry and Deformation Theory*
  Hotel San Michele, Cetraro, Italy — July 2025
- *Western Algebraic Geometry Symposium*
  The University of Arizona, USA — November 2024
- *Western Algebraic Geometry Symposium*
  University of California, Davis, USA — April 2024

- *SLMath Workshops on Commutative Algebra and Noncommutative Algebraic Geometry*
  SLMath (formerly known as MSRI), USA   Spring 2024
- *Higher Dimensional Algebraic Geometry: James 60*
  University of California, San Diego, USA   January 2024

Organized seminars		
Reading group on K3 surfaces and derived categories	Spring 2024
Geometric Representation Theory Seminar (with Ansuman Bardalai)	Spring 2024
Geometric Representation Theory Seminar (with Ansuman Bardalai)	Fall 2023
Reading group on homological mirror symmetry for elliptic curves	Spring 2023
Reading group on Milnor's characteristic classes	Summer 2022

Skills   Python (SageMath)