

# Isabel Longbottom

CONTACT: ilongbottom (at) math (dot) harvard (dot) edu

## RESEARCH INTERESTS

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I am interested in homotopy theory, algebraic K-theory, and algebraic geometry.

## EDUCATION

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- 2022-27 (expected) PhD in Mathematics, supervised by Michael Hopkins  
**Harvard University**  
MA in mathematics, November 2023
- 2018-21 Bachelor of Philosophy - Science (Honours), Mathematics major, CS minor  
**The Australian National University**  
GPA of 7.00 (out of 7.00), First Class Honours

## AWARDS AND SCHOLARSHIPS

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- 2023-24 Raphael and Daniel Salem Fellowship, Harvard
- 2022 Attended the IAS/PCMI Undergraduate Summer School
- 2020 Alan McIntosh Prize for Third Year Mathematics, ANU
- 2020 Hanna Neumann Prize for third year mathematics, ANU
- 2020 Priscilla Fairfield Bok Prize for women in third year science courses, ANU
- 2020 Invited to the IAS/PCMI Undergraduate Summer School subsequently cancelled
- 2019 Hanna Neumann Prize for second year mathematics, ANU
- 2019 Priscilla Fairfield Bok Prize for women in third year science courses, ANU
- 2018 Hanna Neumann Prize for first year mathematics, ANU
- 2018 Mavis Prater Prize for women in mathematics, ANU
- JULY 2017 Tuckwell Scholarship for an undergraduate degree at the ANU

## COMPUTER SKILLS

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(alphabetically) Ada, Haskell, Java,  $\text{\LaTeX}$ , Lean, Macaulay2, Magma, Python, Sage

## TALKS

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- SEPTEMBER 2024 *Intro to equivariant homotopy theory*. Harvard Babytop Seminar.
- AUGUST 2024 *Cyclotomic Frobenius and the Segal conjecture*. MIT Talbot workshop.
- APRIL 2024 *Rational homotopy of the  $K(n)$ -local sphere*. MIT Babytop seminar.
- APRIL 2024 *The Hopf invariant one problem*. Harvard Zygotop seminar.
- FEBRUARY 2024 *K-theory of the  $K(1)$ -local sphere via TC*. Harvard Thursday seminar.
- NOVEMBER 2023 *Sylow Theorems for Infinity Groups*. Harvard Trivial Notions seminar.
- OCTOBER 2023 *K-theory from the ground up*. Harvard Zygotop seminar.
- MAY 2023 *On the K-theory of pullbacks and pushouts*. Harvard Zygotop seminar.
- MARCH 2023 *Abouzaid-Blumberg flow categories*. MIT Juvitop seminar.
- NOVEMBER 2022 *A proof of the Pontryagin-Thom theorem*. MIT Kan seminar.
- OCTOBER 2022 *On the cobordism ring and a complex analogue, after Milnor*. MIT Kan seminar.

## EMPLOYMENT

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FALL 2023, FALL 2024	<b>Teaching Fellow for MATH1B, Harvard</b> Delivered thrice-weekly calculus classes, helped write and mark exams, gave office hours.
2020, 2021	<b>Demonstrator for MATH1115, MATH1116, MATH2222, and MATH2322, ANU</b> Ran (online and in-person) workshops, marked assignments and exams. TA-equivalent position.
2019	<b>Drop-in tutor, ANU</b> Drop-in tutor for first year courses during the exam preparation period.
2019	<b>Peer-Assisted Learning Mentor for MATH1115 and MATH1116, ANU</b> Junior TA position as a second-year teaching first-year students analysis and linear algebra.

## SERVICE

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SPRING & FALL 2024	<b>Organiser for the ZYGOTOP SEMINAR, Harvard</b> Learning seminar for young graduate students in algebraic topology.
2023-24	<b>Organiser for REAL REPRESENTATIONS, Harvard</b> Support for underrepresented groups in math. Helped run social lunches and two trivia nights.
JANUARY 2020, 2021, 2022	<b>Tutor at THE NATIONAL MATHS SUMMER SCHOOL, Canberra</b> Tutored at a two-week-long summer program for mathematically able high school students.
DECEMBER 2020	<b>Maths tutor for the CURIOUS MINDS STEM PROGRAM, Online</b> Ran maths problem-solving sessions for rural female-identifying high school students.
2020	<b>Vice President of the ANU MATHEMATICS SOCIETY</b>