

# MARCUS RUSSELL

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## EDUCATION

**Massachusetts Institute of Technology**

Cambridge, MA

**SB Pure Mathematics**

Expected 2025

- Coursework: Probability, Statistics, Fundamentals of Programming, Intro to Data Science, Microeconomics, Topology, Abstract & Linear Algebra, Real & Complex Analysis, Differential Equations, Mathematical Logic, Combinatoric Analysis
  - Activities: Undergraduate Math Association Mentorship Program, MIT x Citadel Trading Challenge
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## WORK/RESEARCH EXPERIENCE

**Actuarial Credit and Political Risk Intern** *Aon*

June 2024 - August 2024

- Derived analytical solutions for the expected loss of XOL insurance policies for credit and political events within a given price range. Estimated Beta distribution parameters for severity for short-term policies and used weighted average of expected exposure at default values for overall exposure at default for long-term policies.
- Developed a flexible and comprehensive Excel workbook for UK-based brokerage team incorporating expected policy loss calculations for the purpose of analyzing/determining optimal reinsurance policy premiums.
- Generalized the expected loss calculations to account for factors including obligor ratings, tenor, amortization schedules, probability of default tables.

**Directed Reading Program** *MIT Mathematics*

January 2022/2023 - February 2022/2023

- Studied selected topics from a graduate level math textbook under the supervision of a graduate student, met daily with other students in order to gain a richer understanding of various concepts.
- Participated in weekly meetings with faculty from the math department to discuss effective studying methods and received feedback for presentations in addition to learning about their research.
- Culminated in a final presentation and paper about selected topics at the intersection of complex analysis, number theory, and abstract algebra that was delivered in front of an audience of graduate students, undergraduates and math department faculty.

**Arithmetic Topology Research** *Carleton College*

May 2021 - August 2021

- Conducted graduate level math research under the guidance of an assistant professor of mathematics, participating in weekly discussions about various topics in number theory and topology in addition to completing problem sets for the purpose of gaining proficiency in proof writing and advanced mathematical thought.
- Discovered new equations using combinatorial methods and established a mathematically rigorous proof of the validity of said formulas.
- Culminated in a final presentation in front of a panel of professors and students.

**Math Tutor** *Independent/Undergraduate Math Association*

April 2020 - Present

- Instructed and supported high-school and college students from various backgrounds in mathematics remotely and in-person, providing students with access to external resources including textbooks, notes, and connections to teachers.
  - Provided guidance for math concepts ranging from typical high-school curriculum math through upper-level undergraduate courses.
  - Developed personalized tests for students with guidance from math teachers in order to maximize understanding of the material and to foster confidence.
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## SKILLS

- Languages: Python [NumPy, Pandas], Java, SQL, Excel