Justin Chen

Bellevue, WA / Cambridge, UK
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Cambridge Part III Masters' student interested in pursuing a mathematics PhD in topology/geometry.

Education

University of Cambridge, Queens' College BA/MA Mathematics
OCT 2021 - JUNE 2025

First Class in Part 1A, Part 1B, Part II (rank 25/218)

Queens' College Colton Prize (2024) for distinction in mathematics
Queens' College Foundation Scholar (2023)
Queens' College Braithwaite Prize (2022) for distinction in mathematics.

Queens' College Paul Barber Summer Project Fund Recipient (£1200)

Part II Student Talks, *The Banach Tarski Paradox*

Newport High School
SEPT 2017 - JUNE 2021

3.98/4.0 GPA
National AP Scholar, National Merit Finalist

Upper-Level Coursework

Part III (Masters' Level)

Algebraic Topology
Differential Geometry
General Relativity
Lie Algebras and their Representations

Geometric Group Theory
Complex Manifolds
Symplectic Topology

Part II (Undergraduate Level)

Algebraic Topology
Algebraic Geometry
Differential Geometry
Galois Theory
Riemann Surfaces
Probability and Measure

Principles of Quantum Mechanics
Coding and Cryptography
Quantum Information and Computation
Computer-Aided Teaching of All Mathematics

Work Experience

DAMTP / Summer Research Student
JUNE 2024 - AUG 2024

Proved new results about the metric properties of quantum gate complexity using ideas from metric diophantine approximation. Also studied the geometry of quantum complexity, including the complexity metric proposed by Nielson.

Plus Maths Magazine / Summer Intern

JUNE 2024 - AUG 2024

Worked on various math exposition/journalism projects, including writing expository articles, interviewing professors, podcasting, and web designing.

Brookhaven National Laboratory / Summer Intern

JUNE 2023 - AUG 2023

Implemented a number-theoretic algorithm to compile braiding patterns for topological quantum computing. Wrote Python Library to efficiently perform arithmetic in various Euclidean domains.

Technical Skills

Programming	Fluent in Python and Matlab, experience with Java, Javascript, HTML/CSS
Other	LaTeX, Jekyll, git, Excel

Math Communication and Outreach

Experience writing, interviewing, and podcasting for [Plus Magazine](#)

Queens' College Maths Communication Prize (2023, 24)

3B1B Summer of Math Exposition Top 100 Entries (2023)

Cambridge University Archimedeans Society Treasurer (2022-24)

Volunteer for the Prison Mathematics Project

[Youtube channel](#) with 40K+ views

Paid Experience as a Maths Tutor

Other Info

I was a violist for the Cambridge University Orchestra and played for the US All-National Orchestra in high school.

I am bilingual and speak Mandarin Chinese as well as English.