

Jae Hyung (John) Sim

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Education

Ph.D. Mathematics [In Progress]
Boston University

Starting September 2019
Boston, MA

B.A. Mathematics with Honors; Minor in Computer Science
University of Chicago

- Math GPA: 3.78/4.00
- Overall GPA: 3.73/4.00
- National Merit Scholar
- Dean's List 2015-2019

Completed June 2019
Chicago, IL

High School Diploma
Milton Academy

Graduated June 2015
Milton, MA

Work and Research Experience

Number Theory Reading Course
University of Chicago

April 2018 - June 2019
Chicago, IL

- Reading course with Professor Matthew Emerton on local and global class field theory following *Algebraic Number Theory: Proceedings of an Instructional Conference* by Cassels and Frohlich throughout 2018
- Reading course with Professor Matthew Emerton on elliptic curves and CM fields loosely following *Arithmetic of Elliptic Curves* by Silverman

Directed Reading Program
University of Chicago

January 2018 - June 2019
Chicago, IL

- Reading program for undergraduates to work with a graduate mentor in studying higher level mathematics
- Spr 2019 - Studied elliptic curves and their significance in number theory
- Win 2018 - Studied proofs of quadratic reciprocity using field extensions and Frobenius elements

REU in Mathematics
University of Chicago

June - August 2018
Chicago, IL

- Summer research in Algebraic Number Theory and Local Fields with Professor Matthew Emerton
- Presented talk titled "Introduction to p -adic Numbers and Their Use in Algebraic Number Theory"
- Authored "The p -adic numbers and a proof of the Kronecker-Weber theorem" [\[link\]](#)

Analysis RTG Boot Camp
University of Chicago

June - August 2017
Chicago, IL

- Summer math seminar on Complex Analysis, Dynamical Systems, Probability, and Differential Geometry

REU in Mathematics
University of Chicago

June - July 2016
Chicago, IL

- Summer research program in advanced topics in mathematics such as graph theory and topology
- Authored "The Fundamental Group and CW Complexes"

Department Reader
University of Chicago

September 2017 - June 2019
Chicago, IL

- Grader for undergraduate mathematics courses
- Graded MATH 19620 in Fall 2017, Winter 2018 and MATH 20410 in Winter 2019

Outreach

Directed Reading Program
Boston University

September 2019 - Current
Boston, MA

- Reading program for undergraduates to work with a graduate mentor in studying higher level mathematics
- Spr 2020 - Mentoring on elliptic curve cryptography following Hoffstein, Pipher, and Silverman's "An Introduction to Mathematical Cryptography."
- Aut 2019 - Mentored on algebraic number theory following Serre's "A Course in Arithmetic," culminating on a proof of the sum of three squares.

Maroon Tutor Match
University of Chicago

January 2016 - June 2019
Chicago, IL

- Educational program providing affordable one-to-one tutoring for K-12 students in the Hyde Park neighborhood of Chicago
- Weekly tutoring three students in high school mathematics
- Tutoring undergraduates as a department tutor within University

Extracurricular Activities

Society of Physics Students

September 2016 - June 2018

- Undergraduate student organization which hosts weekly Physics faculty talks and acts as intermediary between the Physics department and the undergraduate student body
- 2017-2018 Event Coordinator and Secretary
- 2016-2017 Outreach Chair

Groove Theory Dance Crew

September 2015 - June 2019

- Hip Hop dance crew dedicated to promoting Hip Hop culture within the University of Chicago
- 2017-Current Freestyle Artistic Director
- Taught workshops for local high school students in partnership with My Block, My Hood, My City
- Organized From the Ashes May 2017 and May 2018, an annual festival celebrating the five elements of Hip Hop in partnership with the greater Chicago community and the University of Chicago

Miscellaneous Skills

- Proficient with C++, HTML, and \LaTeX
- Event planning and coordination
- Fluent in Korean
- Breakdancing