
Laura Cui

Boston, MA 02139
(240) 381-6689
lcui @ mit.edu

Education

Massachusetts Institute of Technology

Bachelor of Science in Physics and Mathematics

- GPA: 5.0/5.0
 - Expected graduation: June 2023
 - Relevant coursework: Abstract Algebra I, Probability and Random Variables, Quantum II-III
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Research Experience

JUNE 2020 - Present

MIT Research Laboratory of Electronics - Undergraduate Student Researcher

- Advised by Prof. Dirk Englund and Dr. Carlos Errando Herranz
- Developed bond-orbital model for strain-enhanced second order corrections to optical susceptibility in non-centrosymmetric ionic solids

JUNE 2019 - AUGUST 2019

University of Maryland Joint Quantum Institute - Undergraduate Research Assistant

- Advised by Prof. Jacob M. Taylor and Dr. Daniel Carney
- Investigated decoherence due to long-range interactions in tabletop quantum gravity experiment

JUNE 2018 - AUGUST 2018

Maryland Center for Fundamental Physics - Research Assistant

- Advised by Prof. Thomas D. Cohen
- Reduced doubly heavy tetraquarks to two-body system in formal heavy mass limit and used toy models with radial effective potential to solve numerically
- Showed systems with single state are weakly bound regardless of short distance interactions

SEPTEMBER 2017 - JUNE 2019

blair3sat - Co-founder, Optical Mission Lead

- Designed photometer instrument to measure total electron content in the ionosphere
- Refined satellite design and data collection integration

SEPTEMBER 2017 - JUNE 2019

Naval Research Laboratory - Student Intern

- Worked under Space Science Division as part of Science and Engineering Apprenticeship Program
 - Processed orbital calculations and performed optical corrections for LITES experiment on ISS
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Awards and Honors

2019 **Regeneron Science Talent Search Scholar**

For work with near-threshold doubly heavy tetraquark states

Poster Presentations

2019 **Small Satellite Conference**, Utah State University, Logan, UT

“Space-based Ionosonde Receiver and Visible Limb-viewing Airglow Sensor (SIRVLAS): A CubeSat Instrument Suite for Enhanced Ionospheric Charge Density Measurements”

with Ryan Tse, Patrick Kim, Sujay Swain, Benjamin Cohen, and Gautom Das

Relevant Work Experience

SEPTEMBER 2019 - AUGUST 2020

Art of Problem Solving Academy Gaithersburg - *Teaching assistant*

- Assisted with High School Contest Math and Math Beasts 7-9 summer camps
- Performed grading, outreach, and front desk tasks

JANUARY 2020

J.P. Morgan Chase & Co. - *Quantitative Research Intern, Rates Data Analytics*

- Developed and implemented predictive models for fixed income trading
-

Activities and Leadership

MIT Educational Studies Program

Publicity Director

- Coordinate outreach and event publicity efforts
- Direct teacher and student recruitment

Art Director

- Coordinate design process and purchasing of publicity materials and merchandise

Undergraduate Society for Women in Mathematics

General Board Member

Skills

- Proficient in Python, Java, MATLAB, and Wolfram Language
 - Experience with data science libraries and machine learning
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References

Michel Goemans

Department Head and Professor of Mathematics

Faculty advisor

182 Memorial Dr

Cambridge, Ma 02139

(617) 253-2688

goemans @ math.mit.edu