

ALLEN LIN

CURRICULUM VITAE

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ACADEMIC INTERESTS

Number theory, combinatorics, analysis, Boolean functions, complexity theory, algorithms

EDUCATION

2026	Massachusetts Institute of Technology S.B., Mathematics and Computer Science and Engineering	Cambridge, MA 02139 GPA: 5.0/5.0
2022	Gatton Academy of Mathematics and Science Diploma, Community Scholar with Distinction	Bowling Green, KY 42101 GPA: 4.00/4.00
2022	Larry A. Ryle High School Diploma, Summa Cum Laude	Union, KY 41091 GPA: 4.00/4.00

PUBLICATIONS AND PREPRINTS

3. **The Gauss Circle Problem and Fourier Quasicrystals** (with R. Edwin). In preparation.
2. **Polygamma Functions, The Lerch Transcendent, and Peaks and Descents of Permutations** (with D. Lanphier). In preparation.
1. **Values of certain Dirichlet series and higher derivative formulas of trigonometric functions** (with D. Lanphier). *International Journal of Number Theory* **20** (4), 995–1016. doi.org/10.1142/S1793042124500519.

CONTRIBUTED TALKS

12. *Modular and Automorphic Forms*. Department of Mathematics Directed Reading Program, Massachusetts Institute of Technology, 2025.
11. *The Gauss Circle Problem and Fourier Quasicrystals*. Department of Mathematics Summer Program in Undergraduate Research, Massachusetts Institute of Technology, 2024.
10. *Analysis of Boolean Functions*. Department of Mathematics Directed Reading Program, Massachusetts Institute of Technology, 2023.
9. *Properties of Pólya's Circular Symmetrization*. Annual Meeting of the Kentucky Section of the Mathematical Association of America, Mathematical Association of America (held virtually), 2022.
8. *Values of Dirichlet Series*. Annual Meeting of the Kentucky Section of the Mathematical Association of America, Mathematical Association of America (held virtually), 2022.
7. *Properties of Pólya's Circular Symmetrization*. 41st Annual Mathematics Symposium, Western Kentucky University, 2022.
6. *Make Your Own Fractal*. 41st Annual Mathematics Symposium, Western Kentucky University, 2022.
5. *Values of Dirichlet Series*. 41st Annual Mathematics Symposium, Western Kentucky University, 2022.

¹Updated June 14, 2025

4. *Properties of Pólya's Circular Symmetrization*. 38th Annual Session of the Research Science Institute, Massachusetts Institute of Technology (held virtually), 2021.
3. *Values of Dirichlet Series*. Annual Meeting of the Kentucky Section of the Mathematical Association of America, Mathematical Association of America (held virtually), 2021.
2. *Values of Dirichlet Series*. Student Research Conference, Western Kentucky University (held virtually), 2021.
1. *Values of Dirichlet Series*. 40th Annual Mathematics Symposium, Western Kentucky University (held virtually), 2021.

INVITED TALKS

3. *Evaluating Infinite Series*. Splash!, Massachusetts Institute of Technology, 2022.
2. *A Brief Introduction to Number Theory*. Guest Lectures, Shunya India Math Club (held virtually), 2021.
1. *A Brief Introduction to Number Theory*. Colloquium Lectures, Camp Illumnia (held virtually), 2021.

RESEARCH POSITIONS

Jun 2025–	Undergraduate Student Researcher Department of Mathematics, Massachusetts Institute of Technology
Jun 2024–Aug 2024	Summer Program in Undergraduate Research Department of Mathematics, Massachusetts Institute of Technology
Jun 2023–Nov 2023	Undergraduate Student Researcher Department of Mathematics, Massachusetts Institute of Technology
Jan 2023–May 2023	Undergraduate Student Researcher Department of Mathematics, Massachusetts Institute of Technology
Jun 2021–Aug 2021	Research Science Institute Researcher Research Science Institute, Massachusetts Institute of Technology
Sep 2020–May 2022	Undergraduate Student Researcher Department of Mathematics, Western Kentucky University

TEACHING POSITIONS

Feb 2025–May 2025	Lab Assistant, 6.191 Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology
Jan 2025	Grader, 18.031 Department of Mathematics, Massachusetts Institute of Technology
Feb 2024–Dec 2024	Grader, 18.901 Department of Mathematics, Massachusetts Institute of Technology
Jul 2023–Aug 2023	Last-Week Teaching Assistant Research Science Institute, Massachusetts Institute of Technology

GRANTS AND FUNDING

2024	\$7800	Summer Program in Undergraduate Research Department of Mathematics, Massachusetts Institute of Technology
2023	\$2100	Undergraduate Research Opportunities Program Department of Mathematics, Massachusetts Institute of Technology
2023	\$7200	Undergraduate Research Opportunities Program Department of Mathematics, Massachusetts Institute of Technology
2023	\$2100	Undergraduate Research Opportunities Program Department of Mathematics, Massachusetts Institute of Technology
2022	\$2100	Undergraduate Research Opportunities Program Department of Mathematics, Massachusetts Institute of Technology
2021	\$1000	Research Internship Grant Gatton Academy of Mathematics and Science, Western Kentucky University

ORGANIZATIONS

Sep 2022–May 2024	Educational Studies Program Massachusetts Institute of Technology
Sep 2022–May 2023	Harvard-MIT Math Tournament Harvard University and Massachusetts Institute of Technology
Sep 2022–May 2023	Undergraduate Math Association Massachusetts Institute of Technology
Nov 2020–May 2022	Society for Industrial and Applied Mathematics Western Kentucky University

OTHER POSITIONS

Feb 2025–	Discover Math Freshmen Preorientation Head Program Counselor Office of the First Year, Massachusetts Institute of Technology
Aug 2023–	Associate Advisor Office of the First Year, Massachusetts Institute of Technology
Jun 2023–	Discover Math Freshmen Preorientation Program Counselor Office of the First Year, Massachusetts Institute of Technology
Nov 2023–Nov 2023	Integration Bee Committee Harvard-MIT Math Tournament
May 2023–Aug 2023	High School Studies Program, Summer Director Educational Studies Program, Massachusetts Institute of Technology
Feb 2023–Feb 2023	Integration Bee Committee Harvard-MIT Math Tournament
Feb 2023–May 2023	Diversity, Inclusion, and Equity Committee Chair Undergraduate Math Association, Massachusetts Institute of Technology
Sep 2022–May 2023	Problem-Writing Staff Harvard-MIT Math Tournament
Sep 2022–May 2023	Diversity, Inclusion, and Equity Committee Member Undergraduate Math Association, Massachusetts Institute of Technology Gatton Academy of Mathematics and Science, Western Kentucky University
Sep 2020–May 2022	Peer Tutor Gatton Academy of Mathematics and Science, Western Kentucky University
Aug 2020–May 2022	Audience Assistant Hardin Planetarium, Western Kentucky University

AWARDS

- 2022 **Community Scholar, Honors with Distinction**, Gatton Academy of Mathematics and Science
- 2022 **Summa Cum Laude**, Ryle High School
- 2022 **President's List**, Western Kentucky University
- 2022 **Gates Scholar**, Bill & Melinda Gates Foundation
- 2022 **National Merit Award Recipient**, National Merit Scholarship Corporation
- 2022 **3rd Place at the Society for Industrial and Applied Mathematics Session of the 41st Annual Mathematics Symposium**, Western Kentucky University
- 2022 **Jack Kent Cooke College Scholarship Semifinalist**, Jack Kent Cooke Foundation
- 2021 **President's List**, Western Kentucky University
- 2021 **Program in Mathematics for Young Scientists Scholar**, Program in Mathematics for Young Scientists
- 2021 **President's List**, Western Kentucky University
- 2021 **Research Science Institute Scholar**, Research Science Institute
- 2021 **Mathematics Regional Champion**, Kentucky Association for Academic Competition
- 2020 **President's List**, Western Kentucky University

LICENSES AND CERTIFICATIONS

- 2021 **Wolfram Mathematica Student Certification Level I**, Wolfram