

# Dongho Tommy Kim

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## EDUCATION

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### University of California, Berkeley

Aug 2021 – Dec 2025

Dean's List Fall 2025

GPA: 3.79/4.00

- B.A. Mathematics, Honors
- B.A. Computer Science

Math Major GPA: 3.83/4.00

## RESEARCH

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### Independent Research

May 2025 – Present

- Conducting independent mathematical research in combinatorics under the guidance of Professor Hùng Việt Chu
- Studying the properties of Schreier sets, with a focus on the counts of the second-order Schreier sets, extending the work *The Fibonacci Sequence and Schreier-Zeckendorf Sets*

### Student Researcher | Polymath Jr. REU

Jun 2024 – Aug 2024

- Conducted mathematical research in Diophantine equations under the supervision of Professor Hùng Việt Chu
- Studied the unique nonnegative solutions to a pair of Diophantine equations with varying Fibonacci coefficients, extending the work *Representation of  $\frac{1}{2}(F_N - 1)(F_{N+1} - 1)$  and  $\frac{1}{2}(F_N - 1)(F_{N+2} - 1)$*
- Designed and implemented programs to identify such solutions
- Met weekly with mentors to explore new approaches and analyze emerging patterns in the data

### Research Assistant

Jun 2020 – Aug 2020

- Conducted mathematical research in graph theory under the supervision of Professor Chih-Wen Weng
- Met bi-weekly to discuss research in Hamiltonian graphs and triangulated graphs

## PAPERS AND PREPRINTS

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1. A Pair of Diophantine Equations Involving the Fibonacci Numbers (with X. Chen, H. V. Chu, F. K. Kesumajana, L. Li, S. J. Miller, J. Yang, and C. Yao). *Fibonacci Quart.* 63 (2025), no.3, 542–553 [\[pdf\]](#), [\[journal\]](#)

## INDEPENDENT STUDY / DIRECTED READING

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### Directed Reading Program | Mentor: Seewoo Lee

Spring 2025 – Fall 2025

- Studied *A First Course in Modular Forms* by Fred Diamond and Jerry Shurman
- Participated in weekly discussions with graduate student mentor

### Preliminary Arizona Winter School | Participant

Fall 2025

- Studied the analysis and implementation of algorithms in number theory under the guidance of Thomas Bouchet and Professor Juanita Duque-Rosero

### Graduate-Level Number Theory | Supervisor: Dr. Zeyu Liu

Spring 2025

- Studied  $p$ -adic number theory based on Fernando Q. Gouvêa's  *$p$ -adic Numbers* and Alain M. Robert's *A Course in  $p$ -adic Analysis*
- Participated in biweekly discussions with Dr. Zeyu Liu

### Directed Reading Program | Mentor: Connor Halleck-Dubé

Fall 2024

- Studied *Representation Theory: A First Course* by William Fulton and Joe Harris
- Participated in weekly discussions with graduate student mentor
- Presented in semester-end conference [\[pdf\]](#)

### Preliminary Arizona Winter School | Participant

Fall 2024

- Studied local fields under the guidance of Thomas Browning and Professor Catherine Hsu

### Directed Reading Program | Mentor: Victor Ginsburg

Fall 2023

- Studied *Graph Theory and Additive Combinatorics* by Yufei Zhao
- Participated in weekly discussions with graduate student mentor

## TEACHING AND MENTORING

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<b>Mentor</b>   <i>Math and Physical Sciences (MPS) Scholars</i>	Fall 2024 - Fall 2025
<ul style="list-style-type: none"><li>• Met biweekly with mentees to review key mathematical concepts and help navigate coursework</li><li>• Led collaborative discussions on mathematical concepts and problem-solving techniques</li><li>• Provided guidance on academic and campus resources and offered personalized advice</li></ul>	
<b>Reader</b>   <i>Math 185 (Introduction to Complex Analysis)</i>	Fall 2025
<ul style="list-style-type: none"><li>• Graded problem sets while providing detailed and constructive feedback</li></ul>	
<b>Reader</b>   <i>Math 113 (Introduction to Abstract Algebra)</i>	Spring 2025
<ul style="list-style-type: none"><li>• Graded problem sets while providing detailed and constructive feedback</li></ul>	
<b>Reader</b>   <i>Math 128A (Numerical Analysis)</i>	Fall 2024
<ul style="list-style-type: none"><li>• Graded problem sets and exams while providing detailed and constructive feedback</li></ul>	
<b>Academic Intern</b>   <i>Computer Science Course Staff</i>	Spring 2022 – Spring 2023
<ul style="list-style-type: none"><li>• Helped Teaching Assistant lead a group of 30 students in lab sections</li><li>• Assisted and led discussions in data structures, computer programs, and foundations of data science</li></ul>	

## SELECTED COURSEWORK

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<b>MATH 254A - Graduate Algebraic Number Theory</b>   <i>Prof. Sug Woo Shin</i>	Fall 2025
<ul style="list-style-type: none"><li>• Graduate-level algebraic number theory course using Serre's <i>Local Fields</i> and Neukirch's <i>Algebraic Number Theory</i></li></ul>	
<b>MATH 196 - Honors Thesis</b>   <i>Dr. Zeyu Liu</i>	Fall 2025
<ul style="list-style-type: none"><li>• Wrote an expository paper on elliptic curves and modular forms <a href="#">[pdf]</a></li></ul>	
<b>MATH 143 - Elementary Algebraic Geometry</b>   <i>Prof. Hannah Larson</i>	Spring 2025
<ul style="list-style-type: none"><li>• Upper-level algebraic geometry course using Fulton's <i>Algebraic Curves</i></li></ul>	
<b>MATH 250B - Graduate Commutative Algebra</b>   <i>Prof. Peter Haine</i>	Spring 2025
<ul style="list-style-type: none"><li>• Graduate-level commutative algebra course using Matsumura's <i>Commutative Ring Theory</i></li></ul>	
<b>MATH 274 - Topics in Algebra</b>   <i>Prof. Christian Gaetz</i>	Fall 2024
<ul style="list-style-type: none"><li>• Graduate topics course in the combinatorics of Coxeter groups</li></ul>	
<b>MATH 250A - Graduate Algebra</b>   <i>Prof. Richard Borcherds</i>	Fall 2024
<ul style="list-style-type: none"><li>• Graduate-level abstract algebra course using Lang's <i>Algebra</i></li></ul>	
<b>MATH H185 - Honors Introduction to Complex Analysis</b>   <i>Prof. Tony Feng</i>	Spring 2024
<ul style="list-style-type: none"><li>• Honors-level complex analysis course</li></ul>	

## TALKS

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- *A Pair of Diophantine Equations Involving the Fibonacci Numbers*, with Liran Li - talk at Joint Mathematics Meetings (January 8, 2025) [\[pdf\]](#)

## CONFERENCES ATTENDED

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<b>Combinatorial and Additive Number Theory</b>	May 2025
<b>Joint Mathematics Meeting</b>	Jan 2025
<b>43rd Bay Area Discrete Math Day</b>	Dec 2024
<b>Modern Math Workshop</b>	Oct 2024

## RELEVANT SKILLS

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**Programming Languages:** L<sup>A</sup>T<sub>E</sub>X, Python, Java, MATLAB, Assembly (x86-64, Z80)  
**Languages:** Korean (native), English (fluent), Mandarin (fluent)  
**Libraries:** pandas, NumPy, Matplotlib