

Dongho Tommy Kim

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EDUCATION

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| University of California, Berkeley <i>Berkeley, CA</i> | Aug 2021 - Dec 2025 (Expected) |
| | GPA: 3.77/4.00 |
| <ul style="list-style-type: none">• B.A. in Mathematics <i>College of Letters and Sciences</i>• B.A. in Computer Science <i>College of Computing, Data Science, and Society</i> | <i>Math Major GPA: 3.80/4.00</i> |

RESEARCH

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| Independent Research | May 2025 - Present |
| <ul style="list-style-type: none">• Conducting independent mathematical research in additive number theory 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 <i>The Fibonacci Sequence and Schreier-Zeckendorf Sets</i> | |
| Student Researcher <i>Polymath Jr. REU</i> | 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

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| Research Assistant | Jun 2020 - Aug 2020 |
| <ul style="list-style-type: none">• 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

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 [\[pdf\]](#), [\[journal\]](#)

DIRECTED READING

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| Directed Reading Program <i>Mentor: Seewoo Lee</i> | Spring 2025 – Present |
| <ul style="list-style-type: none">• Studied <i>A First Course in Modular Forms</i> by Fred Diamond and Jerry Shurman• Participated in weekly discussions with graduate student mentor | |
| Graduate-Level Number Theory <i>Supervisor: Dr. Zeyu Liu</i> | Spring 2025 |
| <ul style="list-style-type: none">• Studied p-adic number theory based on Fernando Q. Gouvêa's <i>p-adic Numbers</i> and Alain M. Robert's <i>A Course in p-adic Analysis</i>• Participated in biweekly discussions with Dr. Zeyu Liu | |
| Directed Reading Program <i>Mentor: Connor Halleck-Dubé</i> | Fall 2024 |
| <ul style="list-style-type: none">• Studied <i>Representation Theory: A First Course</i> by William Fulton and Joe Harris• Participated in weekly discussions with graduate student mentor• Presented in semester-end conference [pdf] | |
| Directed Reading Program <i>Mentor: Victor Ginsburg</i> | Fall 2023 |
| <ul style="list-style-type: none">• Studied <i>Graph Theory and Additive Combinatorics</i> by Yufei Zhao• Participated in weekly discussions with graduate student mentor | |

INDEPENDENT STUDY

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| Preliminary Arizona Winter School <i>Participant</i> | Fall 2025 |
| • Studied the analysis and implementation of algorithms in number theory under the guidance of Thomas Bouchet and Professor Juanita Duque-Rosero | |

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| Preliminary Arizona Winter School <i>Participant</i> | Fall 2024 |
| • Studied local fields under the guidance of Thomas Browning and Professor Catherine Hsu | |

TEACHING AND MENTORING

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| Mentor <i>Math and Physical Sciences (MPS) Scholars</i> | Fall 2024 - Present |
| • Currently meeting biweekly with mentees to review key mathematical concepts and help navigate coursework | |

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| Reader <i>Math 185 (Introduction to Complex Analysis)</i> | Fall 2025 - Present |
| • Graded problem sets while providing feedback | |

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| Reader <i>Math 113 (Introduction to Abstract Algebra)</i> | Spring 2025 |
| • Graded problem sets while providing feedback | |

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| Reader <i>Math 128A (Numerical Analysis)</i> | Fall 2024 |
| • Graded problem sets and exams while providing feedback | |

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| Academic Intern <i>Computer Science, Data Science Course Staff</i> | Spring 2022 - Spring 2023 |
| • Helped Teaching Assistant lead a group of 30 students in lab sections | |

SELECTED COURSEWORK

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| MATH 254A - Graduate Algebraic Number Theory <i>Prof. Sug Woo Shin</i> | Fall 2025 |
| • Graduate-level algebraic number theory course using Serre's <i>Local Fields</i> and Neukirch's <i>Algebraic Number Theory</i> | |

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| MATH 196 - Honors Thesis <i>Dr. Zeyu Liu</i> | Fall 2025 |
| • Currently writing an expository paper discussing the modularity theorem | |

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| MATH 143 - Elementary Algebraic Geometry <i>Prof. Hannah Larson</i> | Spring 2025 |
| • Upper-level algebraic geometry course using Fulton's <i>Algebraic Curves</i> | |

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| MATH 250B - Graduate Commutative Algebra <i>Prof. Peter Haine</i> | Spring 2025 |
| • Graduate-level commutative algebra course using Matsumura's <i>Commutative Ring Theory</i> | |

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| MATH 274 - Topics in Algebra <i>Prof. Christian Gaetz</i> | Fall 2024 |
| • Graduate topics course in the combinatorics of Coxeter groups | |

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| MATH 250A - Graduate Algebra <i>Prof. Richard Borcherds</i> | Fall 2024 |
| • Graduate-level abstract algebra course using Lang's <i>Algebra</i> | |

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| MATH H185 - Honors Introduction to Complex Analysis <i>Prof. Tony Feng</i> | Spring 2024 |
| • Honors-level complex analysis course | |

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| MATH 115 - Introduction to Number Theory <i>Prof. Owen Barrett</i> | Fall 2023 |
| • Introductory number theory course using Ireland and Rosen's <i>A Classical Introduction to Modern Number Theory</i> | |

TALKS

- *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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| Combinatorial and Additive Number Theory | May 2025 |
| Joint Mathematics Meeting | Jan 2025 |
| 43rd Bay Area Discrete Math Day | Dec 2024 |
| Modern Math Workshop | Oct 2024 |

RELEVANT SKILLS

Programming Languages: L^AT_EX, Python, Java, MATLAB, Assembly (x86-64, Z80)

Languages: Korean (native), English (fluent), Mandarin (fluent)

Libraries: pandas, NumPy, Matplotlib