Dongho Tommy Kim

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EDUCATION

University of California, Berkeley   Aug 2021 – Dec 2025
Berkeley, CA   *GPA: 3.79/4.00*
- **B.A. in Mathematics** | *College of Letters and Sciences*   *Math Major GPA: 3.83/4.00*
- **B.A. in Computer Science** | *College of Computing, Data Science, and Society*

RESEARCH

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

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

Directed Reading Program | *Mentor: Seewoo Lee*   Spring 2025 – Fall 202
- Studied *A First Course in Modular Forms* by Fred Diamond and Jerry Shurman
- Participated in weekly discussions with graduate student mentor
- Wrote an expository paper on the theory of Hecke Operators in the context of the modularity theorem [pdf]

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

Mentor | *Math and Physical Sciences (MPS) Scholars*   Fall 2024 - Fall 2025
- Met biweekly with mentees to review key mathematical concepts and help navigate coursework
- Led collaborative discussions on mathematical concepts and problem-solving techniques
- Provided guidance on academic and campus resources and offered personalized advice

Reader | *Math 185 (Introduction to Complex Analysis)*   Fall 2025
- Graded problem sets while providing detailed and constructive feedback

Reader | *Math 113 (Introduction to Abstract Algebra)*   Spring 2025
- Graded problem sets while providing detailed and constructive feedback

Reader | *Math 128A (Numerical Analysis)*   Fall 2024
- Graded problem sets and exams while providing detailed and constructive feedback

Academic Intern | *Computer Science Course Staff*   Spring 2022 – Spring 2023
- Helped Teaching Assistant lead a group of 30 students in lab sections
- Assisted and led discussions in data structures, computer programs, and foundations of data science

Selected Coursework

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

MATH 196 - Honors Thesis | *Dr. Zeyu Liu*   Fall 2025
- Wrote an expository paper on elliptic curves and modular forms in the context of the modularity theorem

MATH 143 - Elementary Algebraic Geometry | *Prof. Hannah Larson*   Spring 2025
- Upper-level algebraic geometry course using Fulton's *Algebraic Curves*

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

MATH 274 - Topics in Algebra | *Prof. Christian Gaetz*   Fall 2024
- Graduate topics course in the combinatorics of Coxeter groups

MATH 250A - Graduate Algebra | *Prof. Richard Borcherds*   Fall 2024
- Graduate-level abstract algebra course using Lang's *Algebra*

MATH H185 - Honors Introduction to Complex Analysis | *Prof. Tony Feng*   Spring 2024
- Honors-level complex analysis course

Talks

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

Conferences Attended

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: LaTeX, Python, Java, MATLAB, Assembly (x86-64, Z80)
Languages: Korean (native), English (fluent), Mandarin (fluent)
Libraries: pandas, NumPy, Matplotlib