You-Cheng Chou

Curriculum Vitae

PERSONAL DETAILS

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EDUCATION

Ph.D. in Mathematics 2017–2022
University of Utah

Bachelor of Science in Mathematics 2010–2014
National Taiwan University

WORK EXPERIENCE

HCMC Fellow (Postdoctoral Researcher) 2025–Present
Korea Institute for Advanced Study

Postdoctoral Researcher July 2022–2025
Academia Sinica

Research Assistant Mar. 2016–June 2017
Taida Institute for Mathematical Sciences (TIMS)

Military Service Dec. 2014–Nov. 2015
One-year mandatory service

Research Assistant July 2014–Nov. 2014
Taida Institute for Mathematical Sciences (TIMS)

TEACHING EXPERIENCE

Math 1090 Business Algebra (Instructor) Spring 2022
Math 1090 Business Algebra (Instructor) Fall 2021
Math 1060 Trigonometry (Instructor) Fall 2020
Math 1060 Trigonometry (Instructor) Spring 2020
Math 1090 Business Algebra (Instructor) Fall 2019
Math 1060 Trigonometry (Instructor) Fall 2018
Math 2250 Differential Equations and Linear Algebra (TA) Spring 2018
Math 1210 Calculus I (TA) Fall 2017

AWARDS

Gold Medal, New World Mathematics Award (Bachelor thesis) 2014
Dean's Award, National Taiwan University 2014
Honorable Mention, Shing-Tung Yau College Student Mathematics Contest (Team) 2013

INVITED TALKS

Permutation-equivariant K-theoretic string equation Sep. 2026
3rd Korea-Taiwan Enumerative Geometry Meeting

Moduli of generalized Lamé curves Jun. 2026
International Conference for the 80th Anniversary of the Korean Mathematical Society, Seoul

Moduli of generalized Lamé curves Apr. 2026
Special Geometry, D-modules, and Modular Forms, National Taiwan University

Permutation equivariant quantum K-theory of a point Nov. 2025
KIAS Math-HCMC Fall Workshop 2025

Permutation-equivariant quantum K-theory of a point Nov. 2025
Korea–Taiwan Enumerative Geometry Meeting 2025, National Cheng Kung University

Genus zero quantum K-invariants and Gopakumar–Vafa invariants on semi-positive varieties Sep. 2025
East Asian Symplectic Conference 2025, Hokkaido University

Permutation-equivariant quantum K-theory of a point Sep. 2025
SIMIS–Sinica Interdisciplinary Workshop

Genus 1 quantum K-theory of a point Aug. 2025
Academia Sinica

K-theoretic multiple cover formula on Calabi–Yau threefolds Oct. 2024
Special Seminar, Kavli IPMU

K-theoretic multiple cover formula Oct. 2024
Seoul–Taipei Enumerative Geometry Meeting

Quantum K-invariants = Gopakumar–Vafa invariants on Calabi–Yau threefolds at genus zero Nov. 2023
Algebraic Geometry in East Asia, Korea Institute for Advanced Study

Quantum K-invariants = Gopakumar–Vafa invariants on Calabi–Yau threefolds at genus zero July 2023
Concerto in Quantum K-theory, Institute for Advanced Study in Mathematics

BCOV conjectures on quintic threefolds June 2023
Calabi–Yau with Small Parameters, TIMS

Virasoro constraints for moduli of weighted pointed stable curves 2019
FRAGMENT Seminar, Colorado State University

PUBLICATIONS

[1] *Quantum K-invariants and Gopakumar–Vafa invariants I: The quintic threefold*, with Y.-P. Lee.
American Journal of Mathematics, accepted for publication.
arXiv:2211.00788.

[2] *Gopakumar–Vafa Invariants = Quantum K-invariants on Calabi–Yau threefolds*, with Y.-P. Lee.
In *Categorical and Enumerative Aspects of Mirror Symmetry*, KIAS Springer Series in Mathematics, Vol. 5, Springer (2026), 1–19.
arXiv:2212.13432.

[3] *Quantum K-invariants and Gopakumar–Vafa invariants II: Calabi–Yau threefolds at genus zero*, with Y.-P. Lee.
Geometry & Topology **29** (2025), no. 9, 4665–4693.
arXiv:2305.08480.

[4] *Characterization and enumeration on Lamé equations with finite monodromy*, with Chin-Lung Wang and Po-Sheng Wu.
Transactions of the American Mathematical Society **378** (2025), no. 8, 5279–5304.
arXiv:2402.16286.

[5] *Integrality of genus zero Gopakumar–Vafa type invariants of semi-positive varieties*.
International Journal of Modern Physics A **39** (2024), no. 33, 2446014.
arXiv:2312.01413.

[6] *Higher-genus quantum K-theory*, with Leo Herr and Y.-P. Lee.
Pacific Journal of Mathematics **330** (2024), no. 1, 85–121.
arXiv:2305.10137.

[7] *The Log Product Formula in quantum K-theory*, with Leo Herr and Y.-P. Lee.

Mathematical Proceedings of the Cambridge Philosophical Society **175** (2023), no. 2, 225–252. arXiv:2012.09379.

[8] *Virasoro constraints for moduli of weighted pointed stable curves*, with Y.-P. Lee. Journal of the London Mathematical Society **106** (2022), no. 3, 2050–2074. arXiv:1908.09027.

PREPRINTS

[1] *RC-positivity of complex surfaces*, with Kuang-Ru Wu. arXiv:2609.33656

[2] *Virasoro Recursions for Simplicially Stable Curves with Colliding Markings*, with Hsian-Hua Tseng. Submitted. arXiv:2608.12507.

[3] *On the K-theoretic logarithmic double ramification class*, with Kamyar Amini, Leo Herr, David Holmes, Irit Huq-Kuruvilla, and Y.-P. Lee. Submitted. arXiv:2607.13376.

[4] *A theory of generalized Lamé curves*, with Chin-Lung Wang and Po-Sheng Wu. Submitted. arXiv:2604.21880.

[5] *Generalized Lamé equation with finite monodromy*. Bachelor thesis. arXiv:1611.06643.

PARTICIPATION

Korea–Taiwan Enumerative Geometry Meeting

- Gangneung — Sep. 2026
- National Cheng Kung University — Nov. 2025
- Busan — Oct. 2024

Enumerative Geometry in East Asia

- Kavli IPMU — Oct. 2025
- KIAS — Dec. 2024
- Academia Sinica — Dec. 2023

Western Algebraic Geometry Symposium

- Colorado State University — Apr. 2022
- University of Utah — Nov. 2019
- University of California, Berkeley — Apr. 2019

Other Conferences and Workshops

Summer School on Moduli Spaces, Virtual Invariants and Shifted Symplectic Structures, Samcheok — Jun. 2026
International Conference for the 80th Anniversary of the Korean Mathematical Society, Seoul — Jun. 2026
Special Geometry, D-modules, and Modular Forms, National Taiwan University — Apr. 2026
Moduli and Invariants – A Celebration of Professor Jun Li's 65th Birthday, Jeju — Mar. 2026
KIAS Math–HCMC Fall Workshop, Jeongseon — Nov. 2025
East Asian Symplectic Conference, Hokkaido University — Sep. 2025
SIMIS–Sinica Interdisciplinary Workshop — Sep. 2025
Conferences on Gromov–Witten Theory and Related Topics, BICMR–IBSCGP — Aug. 2024
Recent Developments in Mirror Symmetry on Calabi–Yau Varieties, RIMS — Aug. 2024
Geometry Crossing Singularities, TIMS — Jul. 2024

International Congress of Chinese Mathematicians (ICCM), Beijing	Aug. 2016
Flat Connections, Higgs Bundles and Painlevé Equations, National Taiwan University	May 2016
International Congress of Chinese Mathematicians (ICCM), Beijing	Jul. 2013