Chi-Yun Hsu (許綺云)

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Employment

Santa Clara University, Santa Clara, CA, USA Sep. 2023 –
Assistant Professor

Laboratoire Paul Painlevé, Université de Lille, Lille, France March 2022 – July 2023
Postdoctoral Researcher

University of California, Los Angeles, Los Angeles, CA, USA July 2019 – March 2022
Hedrick Assistant Adjunct Professor

Education

Harvard University, Cambridge, MA, USA July 2014 – May 2019
Ph.D. in Mathematics
Thesis title: Ramification of the Hilbert Eigenvariety
Thesis advisor: Barry Mazur

National Taiwan University, Taipei, Taiwan June 2014
B.S. in Mathematics

Research Interests

Number Theory, p-adic modular forms, eigenvarieties, Galois deformations, Euler systems.

Preprints

- *Eigenvariety for partially classical Hilbert modular forms*, with Mladen Dimitrov, (arXiv).

- *Derived p-adic heights and the leading coefficient of the Bertolini–Darmon–Prasanna p-adic L-function*, with Francesc Castella, Debanjana Kundu, Yu-Shen Lee, and Zheng Liu, (arXiv).

- *Euler systems for* $\mathrm{GSp}_4 \times \mathrm{GL}_2$, with Zhaorong Jin and Ryotaro Sakamoto, submitted as a collection with other papers of Loeffler et al. on $\mathrm{GSp}(4) \times \mathrm{GL}(2)$ and $\mathrm{GSp}(4) \times \mathrm{GL}(2) \times \mathrm{GL}(2)$, (arXiv).

- *Ramification of Hilbert eigenvarieties*, submitted, not planned to resubmit for now because of a mistake in applying Poincaré duality to partially switch slopes, (arXiv, Talk Video).

Publication

- *Mock theta functions and related combinatorics*, with Cristina Ballantine, Hannah Burson, Amanda Folsom, Isabella Negrini, and Boya Wen, In: Alina Bucur, Wei Ho, Renate Scheidler

(eds) Research Directions in Number Theory. Association for Women in Mathematics Series, vol 33. Springer, Cham. (journal, arXiv).

- *Partial classicality for Hilbert modular forms*, J. Number Theory 241 (2022) 542-562, (journal, arXiv).

- *On a partition identity of Lehmer*, with Cristina Ballantine, Hannah Burson, Amanda Folsom, Isabella Negrini, and Boya Wen, Discrete Math. 345 (2022), no. 10, 26pp., (journal, arXiv).

- *Fourier coefficients of the overconvergent generalized eigenform associated to a CM form*, Int. J. Number Theory 16 (2020), no. 6, 1185-1197, (journal, arXiv).

- *Shimura varieties at level $\Gamma_1(p^\infty)$ and Galois representations*, with Ana Caraiani, Daniel R. Gulotta, Christian Johansson, Lucia Mocz, Emanuel Reinecke, Sheng-Chi Shih, Compos. Math. 156 (2020), no. 6, 1152-1230, (journal, arXiv).

- *Strong edge-coloring for jellyfish graphs*, with Gerard J. Chang, Sheng-Hua Chen, Chia-Man Hung, Huei-Ling Lai, Discrete Math. 338 (2015), no.12, 2348–2355, (journal).

Invited talks

- *Upcoming*
  2024 Canadian Mathematical Society Winter Meeting – Arithmetic Aspects of Galois Representations, Nov 2024

- *Mathematics in Musical Tuning*
  San Jose State University Math/Stats Colloquium, May 2024
  SCU Math/CS Colloquium, May 2024

- *On partially classical Hilbert modular forms*
  Warwick Number Theory Seminar, United Kingdom, June 2023
  Berkeley Number Theory & Algebraic Geometry seminar, Oct 2023

- *Galois representation of partially classical Hilbert modular forms*
  Séminaires de Géomètrie Arithmétique et Motivique à Paris 13, France, June 2023

- *Eigenvariety for partially classical Hilbert modular forms*
  Caen Number Theory and Arithmetic Geometry Seminar, France, Oct 2022
  Connections Workshop: Algebraic Cycles, L-Values, and Euler Systems, SLMath, Jan 2023
  Special values of L-functions, Paderborn, Germany, March 2023
  Galois Representations, Automorphic Forms and L-Functions, Luxembourg, July 2024

- *Partial Classicality of Hilbert modular forms*
  Community-building in the Langlands Program, Bonn, Germany, August 2022
  Thematic Program in p-adic L-functions and Eigenvarieties, CIRM, France, July 2022
  Iwasawa theory virtual Seminar, online, April 2022
  Johns Hopkins Number Theory Seminar, online, Mar 2022
  UW Madison Number Theory Seminar, online, Oct 2021
  Five College Number Theory Seminar, online, Oct 2021
  Ohio State University Number Theory Seminar, online, Sep 2021
  Poster Session of miniMAGNTS, online, August 2021
  RAMpAGe, online, March 2021
  University College Dublin Algebra and Number Theory Seminar, online, Feb 2021

- *Geometry of Hilbert Eigenvariety at CM points*
  Galois Representations, Automorphic Forms and L-Functions, CIRM, France, June 2022

- *Beck type identities related to certain mock theta functions*
  Joint Mathematics Meeting, Special Session on Modular forms and Combinatorics, online, April 2022

- *Overconvergent generalized eigenforms associated to a critical CM form*
  Canadian Mathematical Society Winter Meeting, Special Session on Galois representation and L-functions, online, Dec 2021

- *Construction of Euler systems for* $\mathrm{GSp}_4 \times \mathrm{GL}_2$,
  London Euler system Day, online, March 2021
  Columbia University Automorphic Forms and Arithmetic Seminar, online, Nov 2020
  AMS Sectional Meeting, Special Session on Automorphic forms and Galois representations, online, Oct 2020
  University of Oregon Number Theory Seminar, online, June 2020
  UC Santa Barbara Number Theory Seminar, Dec 2019
  John Hopkins University Junior Number Theory Days, Dec 2019
  Caltech Number Theory Seminar, Oct 2019

- *On Ramification of Eigenvarieties,*
  University of Arizona Number Theory Seminar, Feb 2020
  UCLA Number Theory Seminar, Feb 2020.

- *Ramification of Hilbert eigenvarieties at classical points,*
  BIRS workshop – Modularity and Moduli Spaces, Oaxaca, Mexico, Oct 2019
  AMS Sectional Meeting, Special Session on Geometry and Topology in Arithmetic, Sep 2019
  Academia Sinica Number Theory Seminar, Taipei, Taiwan, July 2019
  Poster Session of Iwasawa 2019, Bordeaux, France, June 2019
  Brown University Algebraic Geometry Seminar, April 2019
  Québec-Vermont Number Theory Seminar, Montreal, Canada, Feb 2019
  University of Chicago Number Theory Seminar, Dec 2018
  Stanford University Number Theory Seminar, Oct 2018
  UCLA Number Theory Seminar, Oct. 2018

- *Congruences of modular forms and the eigencurve*
  Northeastern University Pick My Brain Seminar, Jan 2019

- *Vanishing of cohomology of certain Shimura varieties of infinite* Γ_1*-level,*
  4th Japan–Taiwan joint conference on Number Theory, Goto, Japan, Sep 2018

- *Hecke actions on p-adic modular forms,*
  5th Annual AMS Graduate Student Conferences at Brown University, May 2018

Honors

- AMS-Simons Research Enhancement Grants for Primarily Undergraduate Institution (PUI) Faculty, Fall 2024 to Spring 2027.

- Certificate of Distinction in Teaching, Harvard University, Fall 2017 and Spring 2018

- Kao Fellowship, Harvard University, Fall 2018 to Spring 2019

- Derek C. Bok Award for Excellence in Graduate Student Teaching of Undergraduates, Harvard University, Fall 2017
- Government Scholarship to Study Abroad (GSSA), Taiwan, Fall 2017 to Spring 2019
- National Taiwan University Presidential Award, 8 times from Fall 2010 to Spring 2014
- Chow Hung-Ching Scholarship, Academia Sinica, 2012 and 2013
- Tung Hua-Chun Scholarship, Department of Mathematics of National Taiwan University, 2013
- Shing-Tung Yau College Student Mathematics Contest, July 2013
  - *Geometry and Topology, Honorable Mention*
  - *Applied and Computational Mathematics, Honorable Mention*
- Hu Ta-Kai Scholarship, Department of Mathematics of National Taiwan University, 2011

Teaching

Santa Clara University

- Theory of Numbers, Spring 2025
- Introduction to Abstract Algebra, Winter 2025
- Intermediate Analysis II, Spring 2024
- Calculus and Analytic Geometry II, Winter 2024 (2 sections), Spring 2025
- Advanced Calculus, Fall 2023, Fall 2024
- Discrete Mathematics, Fall 2023, Fall 2024, Winter 2025

UCLA

- Graduate Number Theory, Winter 2022
- Linear Algebra I (Proof based), Fall 2021 (2 sections)
- Complex Analysis for Applications, Spring 2021
- Algebra II, Spring 2020
- Mathematical Cryptology, Winter 2020, Spring 2021
- Integration and Infinite Series, Winter 2020 , Winter 2021 (2 sections)
- Differential and Integral Calculus, Fall 2019

Harvard University

- Departmental Pedagogy Fellow, Academic Year 2018
- Graduate Course Assistant, Algebra II, Spring 2018
  - *Received Certificate of Distinction in Teaching*
- Teaching Fellow, Linear Algebra and Differential Equations, Fall 2017

- *Received Derek C. Bok Award for Excellence in Graduate Student Teaching of Undergraduates (5 Teaching Fellows in Graduate School of Arts and Sciences each year)*
- *Received Certificate of Distinction in Teaching*

- Teaching Fellow, Introduction to Functions and Calculus I, Fall 2015, Fall 2016

National Taiwan University

- Teaching Assistant, Linear Algebra (II), Spring 2014
- Teaching Assistant, Geometry, Fall 2013

Academic Service

- SCU MATH/CS colloquium, co-organizer with Shamil Asgarli, Academic Year 2023 –
- Judge of MAA MathFest Undergraduate Poster Session, Aug 2024
- Coordinator for San Jose Math Circle, with Anh Thai Nhan, Academic Year 2023
- Referee for Quaestiones Mathematicae, 1 refereed
- Reviewer for Mathematical Review, 4 reviewed
- UCLA Women in Math.

  - Undergraduate Mentor, Academic Year 2021
  - Panelist for Graduate School Panel, Sep 2021
  - Speaker for Research Night, May 2021

- UCLA-CSU Summer Bridge Program, Instructor, Summer 2021
- UCLA Equity, Diversity and Inclusion Committee, Postdcotoral Member, Academic Year 2021
- UCLA Course Development Committee, Postdcotoral Member, Academic Year 2020
- UCLA Number Theory Seminar,

  - CHAT (Career, History and Thoughts) Seminar series, Co-organizer with Shekhar Khare, Academic Year 2020; with Shekhar Khare and Henri Darmon, Fall 2023
  - Co-organizer with Brian Lawrence, Academic Year 2021
  - Co-organizer with Jeff Manning, Academic Year 2019, 2020

- Harvard Number Theory Seminar, Co-organizer with Alison Miller, Academic Year 2018
- Graduate Workshop in Algebraic Geometry for Women and Mathematicians of Minority Genders, Teaching Assistant, Spring 2018

Languages

- Mandarin: Native
- English: Fluent
- French: Intermediate
- Japanese: Intermediate (JLPT N3)

References

Barry Mazur
Gerhard Gade University Professor
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