# Chi-Yun Hsu (許綺云)

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## Employment

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

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

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

## Education

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

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

## Research Interests

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

## Preprints

- *Mock theta functions and related combinatorics*, with Cristina Ballantine, Hannah Burson, Amanda Folsom, Isabella Negrini, and Boya Wen, submitted, (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 GSp(4) × GL(2) and GSp(4) × GL(2) × 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

- *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

- *On partially classical Hilbert modular forms*
  Warwick Number Theory Seminar, June 2023
- *Galois representation of partially classical Hilbert modular forms*
  Séminaires de G'eomètrie Arithmétique et Motivique à Paris 13, June 2023
- *Eigenvariety for partially classical Hilbert modular forms*
  Caen Number Theory and Arithmetic Geometry Seminar, Oct 2022
  Connections Workshop: Algebraic Cycles, L-Values, and Euler Systems, Jan 2023
  Special values of L-functions, March 2023
- *Partial Classicality of Hilbert modular forms*
  Community-building in the Langlands Program, August 2022
  Thematic Program in $p$-adic $L$-functions and Eigenvarieties, July 2022
  Iwasawa theory virtual Seminar, Apr 2022
  Johns Hopkins Number Theory Seminar, Mar 2022
  UW Madison Number Theory Seminar, Oct 2021
  Five College Number Theory Seminar, Oct 2021
  Ohio State University Number Theory Seminar, Sep 2021
  Poster Session of miniMAGNTS, Aug 2021
  RAMpAGe, March 2021
  University College Dublin Algebra and Number Theory Seminar, Feb 2021
- *Geometry of Hilbert Eigenvariety at CM points*
  Galois Representations, Automorphic Forms and L-Functions, June 2022
- *Beck type identities related to certain mock theta functions*
  Joint Mathematics Meeting, Special Session on Modular forms and Combinatorics, Apr 2022
- *Overconvergent generalized eigenforms associated to a critical CM form*
  Canadian Mathematical Society Winter Meeting, Special Session on Galois representation and $L$-functions, Dec 2021
- *Construction of Euler systems for* $\mathrm{GSp}_4 \times \mathrm{GL}_2$*,*
  Euler system Day, London, March 2021
  Automorphic Forms and Arithmetic Seminar, Columbia, Nov 2020
  AMS Sectional Meeting, Special Session on Automorphic forms and Galois representations, Oct 2020
  University of Oregon Number Theory Seminar, June 2020
  UC Santa Barbara Number Theory Seminar, Dec 2019
  2019 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, Oct 2019
  AMS Sectional Meeting, Special Session on Geometry and Topology in Arithmetic, Sep 2019
  Academia Sinica Number Theory Seminar, July 2019
  Poster Session of Iwasawa 2019, June 2019
  Brown University Algebraic Geometry Seminar, April 2019
  Québec-Vermont Number Theory Seminar, 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*
  Pick My Brain Seminar, Northeastern University, Jan 2019
- *Vanishing of cohomology of certain Shimura varieties of infinite* $\Gamma_1$*-level,*
  4th Japan–Taiwan joint conference on Number Theory, Sep 2018
- *Hecke actions on p-adic modular forms,*
  5th Annual AMS Graduate Student Conferences at Brown, May 2018

## Honors and Fellowships

- Derek C. Bok Award for Excellence in Graduate Student Teaching of Undergraduates, Harvard University, Fall 2017
- Certificate of Distinction in Teaching, Harvard University, Fall 2017 and Spring 2018
- Kao Fellowship, Harvard University, Fall 2018 to Spring 2019
- 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

### UCLA

- Graduate Number Theory, Winter 2022
- Linear Algebra I (Proof based), Fall 2021
- Complex Analysis for Applications, Spring 2021

- Algebra II, Spring 2020
- Mathematical Cryptology, Winter 2020, Spring 2021, Spring 2022
- Integration and Infinite Series, Winter 2020, Winter 2021
- 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

- Reviewer for Mathematical Review, 1 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
  - 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**
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