

Wei-Lun Tsai

Curriculum Vitae

Department of Mathematics
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Employment

- 2020 – present **Research Associate and Lecturer**, *University of Virginia*.
Mentor: Professor [Ken Ono](#)
- 2013 – 2014 **Research Assistant**, *Institute of Mathematics, Academia Sinica*.
Mentor: Professor [Chia-Fu Yu](#)

Education

- 2015 – 2020 **Ph.D. in Mathematics**, *Texas A&M University*.
Advisor: Professor [Riad Masri](#)
GPA: 4.0/4.0
- 2007 – 2012 **B.S. & M.Sc. in Mathematics**, *National Taiwan University*.
Advisor: Professor [Ki-Seng Tan](#)

Research Interests

Automorphic forms, L -functions, and number fields, with a focus on statistical questions related to these topics.

Publications

1. **Even values of Ramanujan's tau-function**, (with J. S. Balakrishnan, and K. Ono), submitted for publication.
2. **Heights of points on elliptic curves over \mathbb{Q}** , (with M. Griffin, and K. Ono), Proceedings of the American Mathematical Society, accepted for publication.
3. **Quadratic twists of elliptic curves and class numbers**, (with M. Griffin, and K. Ono), submitted for publication.
4. **Variants of Lehmer's speculation for newforms**, (J. S. Balakrishnan, W. Craig, and K. Ono), submitted for publication.
5. **Nonvanishing of Hecke L -functions and Bloch-Kato p -Selmer groups**, (with A. Iannuzzi, B. D. Kim, R. Masri, A. Mathers and M. Ross), *Mathematical Research Letters*, **26** (2019), no. 4.
6. **An effective bound for the partition function**, (with N. Khaochim and R. Masri), *Research in Number Theory*, (2019), **5**:14.
7. **Effective bounds for traces of singular moduli**, (with H. Ellers, M. Kenney and R. Masri), *Journal of Number Theory*, **212** (2020).

8. **Computing Stark units as special Gamma values**, (with A. Barquero-Sanchez and R. Masri), submitted for publication.
9. **Asymptotic distribution of the partition crank**, (with A. Hamakiotes and A. Kriegman), submitted for publication.
10. **Equidistribution of Fourier coefficients of integral weight weak Maass forms**, (with R. Masri), preprint available upon request.
11. **Equidistribution of Fourier coefficients of half-integral weight harmonic Maass forms**, (with R. Masri), preprint available upon request.
12. **Malle's conjecture for $G \times A$, with $G = S_3, S_4, S_5$** , (with R. Masri, F. Thorne, and J. Wang), submitted for publication.
13. **The asymptotic distribution of traces of weak Maass forms**, (with N. Khaochim and R. Masri), submitted for publication.
14. **Tamagawa products of elliptic curves over \mathbb{Q}** , (with M. Griffin, and K. Ono), in preparation.

Mentoring

- Summer 2020 **Instructor**, *Summer REU*, The University of Virginia.
Mentored undergraduate students in the Number Theory Research Group
- Summer 2019 **Graduate Student Mentor**, *Summer REU*, Texas A&M University.
Mentored undergraduate students in the Number Theory Research Group
- Spring 2019 **Mentor**, *Directed Reading Program*, Texas A&M University.
Topic: *The zeros of the Riemann zeta function*
- Fall 2018 **Mentor**, *Directed Reading Program*, Texas A&M University.
Topic: *The distribution of prime numbers*
- Summer 2018 **Graduate Student Mentor**, *Summer REU*, Texas A&M University.
Mentored undergraduate students in the Number Theory Research Group
- Summer 2017 **Graduate Student Mentor**, *Summer REU*, Texas A&M University.
Mentored undergraduate students in the Number Theory Research Group

Teaching Experience

- Spring 2021 **Instructor**, *Survey of Algebra*, University of Virginia.
- Spring 2021 **Recitation Instructor**, *Basic Real Analysis*, University of Virginia.
- Fall 2020 **Instructor**, *Calculus III*, University of Virginia.
- Fall 2020 **Recitation Instructor**, *Calculus III*, University of Virginia.
- Fall 2019 **Teaching Assistant**, *Engineering Mathematics I-Recitation and Python Lab*, Texas A&M University.
- Fall 2018 **Instructor**, *Mathematical Concepts-Calculus*, Texas A&M University.
- Summer 2018 **Instructor**, *Complex Analysis Qualifying Preparation Course*, Texas A&M University.

- Fall 2017 **Teaching Assistant**, *Engineering Mathematics I–Recitation and MATLAB Lab*, Texas A&M University.
- Spring 2017 **Teaching Assistant**, *Engineering Mathematics I–Recitation and MATLAB Lab*, Texas A&M University.
- Fall 2016 **Teaching Assistant**, *Engineering Mathematics I–Recitation and MATLAB Lab*, Texas A&M University.
- Spring 2016 **Teaching Assistant**, *Engineering Mathematics II–Recitation and MATLAB Lab*, Texas A&M University.

Selected Talks

- April 7, 2021 Number Theory Seminar, Vanderbilt University.
- March 19, 2021 Number Theory Seminar, University of Virginia.
- November 30, 2020 Combinatorics, Linear Algebra and Number Theory Seminar, Washington State University.
- April 13, 2019 Southern Regional Number Theory Conference, Louisiana State University.
- April 4, 2019 Number Theory and Representation Theory Seminar, University of Wisconsin – Madison.
- March 27, 2019 Number Theory Seminar, Texas A&M University.
- June 1, 2018 CTNT 2018 Conference, University of Connecticut.
- March 20, 2018 32th Automorphic Forms Workshop, Tufts University.
- February 28, 2018 Number Theory Seminar, Texas A&M University.

Recent Conferences Attended

- Fall 2020 Modularity of Quantum Systems, KITP
- Spring 2019 Southern Regional Number Theory Conference
- Spring 2019 33th Automorphic Forms Workshop
- Summer 2018 Connecticut Summer School and Conference in Number Theory
- Spring 2018 32th Automorphic Forms Workshop
- Summer 2016 Connecticut Summer School and Conference in Number Theory

Referee Service

Proceedings of the American Mathematical Society (4 times)
Houston Journal of Mathematics
Research in the Mathematical Sciences
Research in Number Theory (3 times)

Service

- Fall 2019 **Volunteer**, *Derivative Bee*, Texas A&M University.
- Summer 2019 **Organizer**, *Graduate Student Talks and Panel*, Texas A&M University.
- Fall 2018 **Volunteer**, *Derivative Bee*, Texas A&M University.
- Fall 2018 **Panelist**, *First-Year Graduate Student Seminar*, Texas A&M University.
- Spring 2018 **Volunteer**, *Integral Bee*, Texas A&M University.
- Fall 2017 **Volunteer**, *Derivative Bee*, Texas A&M University.

Honors and Awards

2012 **Outstanding Teaching Assistant Award**, *National Taiwan University*.