

# Eren Mehmet Kiral

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CONTACT INFORMATION	Keio University Faculty of Science and Technology Department of Mathematics	erenmehmetkiral@protonmail.com <a href="https://ekiral.github.io/">https://ekiral.github.io/</a> Nationality: Republic of Turkey Date of Birth: 19.09.1986
RESEARCH INTERESTS	Automorphic forms and representations, $L$ -functions, metaplectic forms, analytic number theory. Deep Bayesian Neural Networks.	
EDUCATION	<b>Brown University</b> , Providence, RI Ph.D. in Mathematics, May 2014 <b>Advisor</b> Jeffrey Hoffstein Thesis Title: <i>Spectral Theory and Shifted Convolution Sums in Analytic Number Theory</i> M.S. in Mathematics, May 2012  <b>Boğaziçi University</b> , İstanbul, Turkey. B.Sc. in Mathematics, June 2008 Graduated with GPA 3.93/4.00 The Rectorate Special Award  <b>Üsküdar American Academy</b> , 2004. The Dr. Virginia Canfield Award for Overall Excellence	
POSITIONS HELD	<b>Project Associate Professor</b> <i>Keio University</i> September 2020–Present. <b>Special Postdoctoral Researcher (SPDR)</b> <i>RIKEN AIP, Mathematical Science Team</i> , Yokohama, Japan. March 2020–August 2023. Team Leader: Kenichi Bannai <b>JSPS Fellow</b> <i>Host Institution: Sophia University</i> . October 2018–February 2020. Host Researcher: Maki Nakasuji <b>Postdoc</b> <i>Keio University</i> April 2018–September 2018. Postdoc Mentor: Kenichi Bannai <b>Postdoc</b> <i>MSRI Semester Program: Analytic Number Theory</i> , Mathematical Sciences Research Institute, Berkeley CA. (Spring 2017). Postdoc Mentor: Dinakar Ramakrishnan <b>Visiting Assistant Professor</b> <i>Texas A&amp;M University</i> (Fall 2014–August 2017) Postdoc Mentor: Matthew Young <b>Teaching Fellow</b> Brown University. <b>Graduate Member</b> <i>Automorphic Forms, Combinatorial Representation Theory and Multiple Dirichlet series</i> , semester program in ICERM, Providence, RI (Spring 2013)	
HONORS AND AWARDS	2020 SPDR (2020–2023, 3,000,000 JPY) 2018 KAKENHI (2018–2020, 2,300,000 JPY) 2016 AMS-Simons Travel Grant 2009 Graduate Fellowship, Brown University 2009 Dora Aksoy Award  2008 Scholarship, Vehbi Koç Foundation  2008 First rank in the Faculty of Arts and Sciences 2008 The Rectorate Special Award, Boğaziçi University	Research Budget by RIKEN Grant-in-Aid for JSPS Fellows An award for scientific travel  Given in recognition of excellence in undergraduate mathematics Given in recognition of excellence in undergraduate mathematics  Given to one person from the outgoing year for academic success and outstanding public work.

PUBLICATIONS AND  
PREPRINTS

1. “The Lie-Group Bayesian Learning Rule”  
joint with Thomas Möllenhoff and M. Emtiyaz Khan.  
*The 26th International Conference on Artificial Intelligence and Statistics (AISTATS 2023) in Proceedings of Machine Learning Research (PMLR)* 206:3331-3352.
2. “Subconvexity for twisted  $GL(3)$   $L$ -functions”  
joint with Chan Ieong Kuan and Didier Lesesvre.  
*Acta Arithmetica* 202 (2022), 281-302.
3. “Parametrization of Kloosterman sets and  $SL_3$ -Kloosterman sums”  
joint with Maki Nakasuji.  
*Advances in Mathematics* 403 (2022), 108392.
4. “Additive twists and a conjecture by Mazur, Rubin and Stein”  
joint with Nikolaos Diamantis, Jeffrey Hoffstein and Min Lee  
*Journal of Number Theory* 209 (2020): 1-36.
5. “Level reciprocity in the twisted second moment of Rankin-Selberg  $L$ -functions”  
joint with Nickolas Andersen  
*Mathematika* Volume 64, Issue 3, (2018): 770–784.
6. “The fifth moment of modular  $L$ -functions”  
joint with Matthew Young.  
*Journal of the European Mathematical Society (JEMS)*, Volume 23, Issue 1, (2021): 237–314.
7. “Kloosterman sums and Fourier coefficients of Eisenstein series”  
joint with Matthew Young.  
*The Ramanujan Journal* Volume 49, (2019): 391-409.
8. “Oscillatory integrals with uniformity in parameters”  
joint with Ian Petrow, Matthew Young.  
*Journal de Théorie des Nombres de Bordeaux* Tome 31 No. 1 (2019): 145–159.
9. “The Voronoi formula and double Dirichlet series”  
joint with F. Zhou.  
*Algebra & Number Theory* Volume 10, No. 10, (2016):2267–2286.
10. “Opposite sign Kloosterman sum Zeta function”  
*Mathematika*, Volume 62, Issue 02, (2016): 406–429.
11. “Bounds on sup-norms of half integral weight modular forms”  
*Acta Arithmetica*, Volume 165 No. 4 (2014): 385–400.
12. “Counting square discriminants”  
joint with T. Hulse, C. I. Kuan, L. M. Lim.  
*Journal of Number Theory*, Volume 162, (2016): 255–274.
13. “Subconvexity for half-integral weight  $L$ -functions”  
*Mathematische Zeitschrift*, Volume 281, Issue 3 (2015): 689–722.
14. “The sign of Fourier coefficients of half integral weight cusp forms”  
joint with T. Hulse, C. I. Kuan, L. M. Lim  
*International Journal of Number Theory* Volume 8, No. 03 (2012): 749–762.

SELECTED  
CONFERENCES  
AND WORKSHOPS  
ATTENDED

- *Automorphic forms and Arithmetic* Mathematisches Forschungsinstitut Oberwolfach, Workshop ID: 1736. Oberwolfach, Germany. (September 2017)
- *BIRS Workshop 13w5154 Whittaker Functions: Number theory, Geometry and Physics*, Banff International Research Station. Banff, Alberta, Canada. (October 2013)
- *International Colloquium on Automorphic forms and Representations*, Tata Institute for Fundamental Research. Mumbai, India (January 2012)
- *2011 Arizona Winter School*, Arizona State University. Tuscon, AZ. (March 2011)

- SERVICES
- Organized the workshop on automorphic forms and  $L$ -functions in Nesin Mathematics Village, İzmir, Selçuk, Turkey, July 30-August 5, 2018.
  - Co-organized the Number Theory seminar in Texas A&M University, 2015-2017.
  - Co-organized a graduate student conference at Brown funded by the AMS student chapter. (May 2013)
  - Editor for “Matematik Dünyası” (World of Mathematics), a Turkish popular mathematics magazine, 2005-2014 and 2019-2020.
- TEACHING EXPERIENCE
- Texas A&M University**, College Station, TX
- |                                 |             |
|---------------------------------|-------------|
| Communications and Cryptography | Fall 2016   |
| Linear Algebra                  | Spring 2016 |
| Discrete Mathematics            | Fall 2015   |
| Linear Algebra                  | Spring 2015 |
| Calculus I                      | Fall 2014   |
- Brown University**, Providence, RI
- as Teaching Fellow* (instructor for the course)
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|------------------------|------------------------|
| Calculus II            | Fall 2013              |
| Multivariable Calculus | Spring 2012, Fall 2012 |
- as Teaching Assistant*
- |            |                        |
|------------|------------------------|
| Calculus I | Spring 2011, Fall 2011 |
|------------|------------------------|
- Mathematics Village**, Şirince, Selçuk, İzmir, Turkey
- A non-profit initiative that promotes interest and provides training to bright high-school, undergraduate and graduate students*
- designed and taught courses for all levels:
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|--|-------------|
| Prime factorization in algebraic number fields | Summer 2023 |
| Lerch Zeta functions & Heisenberg group        | Summer 2022 |
| Riemann-Zeta and $L$ -Functions                | Summer 2018 |
| Lie Algebras                                   | Summer 2014 |
| Coding for high school students (python)       | Summer 2014 |
| Classical Automorphic Forms                    | Summer 2011 |
| Number Theory for high school students         | Summer 2011 |
| Dedekind Rings                                 | Summer 2010 |
| Multivariable Calculus                         | Summer 2010 |
| Hilbert Spaces                                 | Summer 2009 |
| Multivariable Calculus                         | Summer 2008 |
| Geometric Algebra                              | Summer 2008 |
| Complex Analysis                               | Summer 2007 |
- Boğaziçi University** Istanbul, Turkey
- as Teaching Assistant*
- |               |                        |
|---------------|------------------------|
| Real Analysis | Spring 2010, Fall 2009 |
|---------------|------------------------|
- LANGUAGES
- Turkish (native), English (fluent), German (beginner), Japanese (beginner).

INVITED  
TALKS

- *Lie Group Bayesian Learning Rule*  
OCAMI Workshop *Statistical Theories and Machine Learning Using Geometric Methods*, Osaka, Japan (December 2023)  
*Chung-Ang University seminar*, Seoul Korea (November 2023)  
*KIAS seminar*, Seoul Korea (November 2023)  
*POSTECH MINDS seminar*, Pohang, Korea (November 2023)  
*YMC 2023, Young Mathematicians Challenge* Tokyo, Japan (March 2023)  
Vector Institute, via Zoom (March 2023)
- *Continued Fractions* Spring/Fall Mathematics Gatherings at Bursa University via Zoom (October 2021)
- *Calculating  $\zeta$  and L-functions* Colloquium of Directed Readings Program, DRP Math Turkey, online (August 2021)
- *Cryptography* Mathematics Workshop at Ankara University, via Zoom (July 2021).
- *Kloosterman Sums for  $SL(3)$  long word element* 2020 Fall POSTECH PMI Number Theory Seminar in South Korea, via Zoom (September 2020)
- *Kloosterman sums for  $SL(3)$  Long Word Element* UCGEN online seminar, International Algebraic Geometry Joy, (September 2020)
- *Riemann Hypothesis*. In Turkish, expository. Sciences Village unsolved problems online video series (October 2020)
- *13<sup>th</sup> Young Mathematicians Conference on Zeta Functions*. Toyoma, Japan (February 2020)
- *Boğaziçi University Colloquium*, İstanbul, Turkey (January 2020)
- *Linfoot Number Theory Seminar*, Bristol, UK (December 2019)
- *RIMS Workshop 2019 "Analytic Number Theory and Related Topics"*, Kyoto, Japan (October 2019)
- *Chung-Ang University Analysis Seminar*, Seoul, Korea (March 2019)
- *KIAS number theory seminar*, Seoul, Korea (March 2019)
- *Linfoot Number Theory Seminar*, Bristol, UK (February 2019)
- *Number Theory mini-workshop at Sophia*, Tokyo, Japan (January 2019)
- *Sophia University Colloquium* Tokyo, Japan (December 2018)
- *Waseda University Number Theory Seminar* Tokyo, Japan (April 2018)
- *Mimar Sinan Güzel Sanatlar Üniversitesi* İstanbul, Turkey (November 2017)
- *Claremont McKenna College Colloquium* Claremont, CA. (April 2017)
- *Texas A&M Number Theory Seminar* College Station, TX. (November 2016)
- *Connecticut Summer School in Number Theory* Storrs, CT. (August 2016)
- *Louisiana State University Algebra and Number Theory Seminar*, Baton Rouge, LA (February 2016).
- *Rutgers University Number Theory Seminar*, New Brunswick, NJ. (December 2015).
- *SUNY at Buffalo Analysis Seminar*, Buffalo, NY. (October 2015).
- *Texas A&M University Number Theory Seminar*, College Station, TX. (September 2015).
- *Texas A&M University Number Theory Seminar*, College Station, TX. (October 2014).
- *Texas A&M University Number Theory Seminar*, College Station, TX. (April 2014).
- *Boğaziçi University Colloquium*, İstanbul, Turkey. (January 2014).
- *University of Colorado Number Theory Seminar*, Boulder, CO. (November 2013).
- *Five College Number Theory Seminar*, Amherst, MA. (September 2013).
- *21<sup>st</sup> National Mathematics Symposium*, Koç University, Turkey. (September 2008).

REFERENCES

**Jeffrey Hoffstein**, Professor at Brown University,  
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Providence, RI 02912

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**Roman Holowinsky**, Professor at Ohio State University.  
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**Dinakar Ramakrishnan** Professor at Caltech  
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Mathematics 253-37  
Caltech, Pasadena, CA 91125

**Paulo Lima-Filho** (concerns teaching), Professor and Associate Head for Operations  
and Undergraduate Programs at Texas A&M University,  
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