

FRANK THORNE

Contact Information:

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- Employment** NSF Postdoctoral Fellow, Stanford University, Fall 2008-present.
Mentor: Kannan Soundararajan.
Assistant Professor, University of South Carolina, Fall 2008-present (on leave).
- Education** Ph.D., University of Wisconsin, Madison, WI, 2008.
Dissertation under the supervision of Prof. Ken Ono: ‘Extensions of results on the distribution of primes.’
Rice University, Houston, TX.
B.A. summa cum laude in Mathematics, May 1999.
- Research Interests** Number theory; distribution of primes and broadly related questions.
- Research Publications** • *Bounded gaps between products of primes with applications to elliptic curves and ideal class groups*, International Mathematics Research Notices (2008), 41 pp.
• *Irregularities in the distribution of primes in function fields*, J. Number Theory **128** (2008), 1784-1794.
• *Bubbles of congruent primes*, submitted.
• *An uncertainty principle for function fields*, submitted.
• *Maier matrices beyond \mathbb{Z}* . Combinatorial number theory, Proceedings of the Integers Conference 2007, 185-192.
• *An improved version of the effective Chebotarev density theorem*, in preparation.
• *On the existence of large degree representations for fields of small discriminant*, with K. Soundararajan, in preparation.
• *Sieve methods and cubic fields*, in preparation.
• *Zeros of Dirichlet series outside the critical strip*, with K. Soundararajan, in preparation.
• *Analytic properties of Shintani zeta functions*, solicited for the Proceedings of the RIMS Symposium on automorphic forms, automorphic representations and related topics, in preparation.
• *The secondary term in the Davenport-Heilbronn theorem*, in preparation.
- Awards and Prizes** • Invited Participant, Math Olympiad Summer Program.
Participated, all expenses paid, in the summer training camp for the IMO.
• Top 75, Putnam Examination.
• NSF VIGRE Merit Fellowship, Spring 2007, Fall 2007, Spring 2008.
• Letters and Science Teaching Fellow, Fall 2007.
Was selected as one of fifteen students (and one of two math students) to plan and lead orientation for new teaching assistants in the fall.
• Excellence in Mathematical Research Award, Spring 2008.

- Professional Service**
- Referee, Proceedings of the American Mathematical Society (10 articles), International Journal of Number Theory, Communications in Number Theory and Physics, American Journal of Mathematics, Acta Mathematica Sinica.
 - Reviewer, Mathematical Reviews (2 articles).
 - Reviewer, NSA Mathematical Sciences Grant Program.
 - Volunteer, Mega Math Meet and Sidewalk Math.
 - Organizer, Stanford Analytic Number Theory Seminar, October 2008-present.
 - Organizer, Midwest Number Theory Conference for Grad Students V, November 2007.

- Research Talks**
- *Bounded gaps between products of primes with applications to elliptic curves and ideal class groups*, Midwest Number Theory Conference for Grad Students IV, UIUC, October 2006.
 - *Bounded gaps between products of primes with applications to elliptic curves and ideal class groups*, AMS Sectional, Fayetteville, AR, November 2006.
 - *Bounded gaps between products of primes with applications to elliptic curves and ideal class groups*, Number Theory Seminar, UW-Madison, December 2006.
 - *Bounded gaps between products of primes with applications to elliptic curves and ideal class groups*, Number Theory Seminar, UIUC, April 2007.
 - *Bounded gaps between products of primes with applications to elliptic curves and ideal class groups*, Illinois Number Theory Fest, UIUC, May 2007.
 - *Maier matrices beyond \mathbb{Z}* , Number Theory Seminar, University of South Carolina, October 2007.
 - *Maier matrices beyond \mathbb{Z}* , Number Theory Seminar, Stanford, October 2007.
 - *Maier matrices beyond \mathbb{Z}* , Integers, Carrollton, GA, October 2007.
 - *Maier matrices beyond \mathbb{Z}* , Palmetto Number Theory Series, Furman, February 2008.
 - *Extensions of results on the distribution of primes*, Colloquium, University of South Carolina, February 2008.
 - *Bounded gaps between products of primes with applications to elliptic curves and ideal class groups*, 22nd Annual Workshop on Automorphic Forms and Related Topics, Texas A&M, March 2008.
 - *Analytic properties of Shintani zeta functions*, Zeta Function Days, Seoul, Korea, September 2009.
 - *Analytic properties of Shintani zeta functions*, University of South Carolina, December 2009.
 - *Analytic properties of Shintani zeta functions*, Palmetto Number Theory Series, Columbia, SC, December 2009.
 - *Analytic properties of Shintani zeta functions*, Kobe Number Theory Workshop, Kobe, Japan, January 2010.
 - *Analytic properties of Shintani zeta functions*, RIMS Symposium on automorphic forms, automorphic representations and related topics, University of Tokyo, January 2010.
 - *Analytic properties of Shintani zeta functions*, colloquium, Kinki University, Osaka, Japan, January 2010.

Additional Seminar Talks *No longer updated. But please see <http://math.stanford.edu/~thorne/previous-talks.html> for notes or slides for many of these talks.*

- Additional Conferences Attended**
- Midwest Number Theory Day, UW-Madison, October 2005.
 - Midwest Number Theory Conference for Grad Students III, UW-Madison, October 2005.
 - Number Theory and Random Matrix Theory, Rochester, June 2006.
 - Summer School in Iwasawa Theory, Hamilton, Ontario, August 2007.
 - Analytic Number Theory and Higher Rank Groups, NYU, May 2008.
 - Arithmetic of L -functions, Park City Mathematics Institute, June-July 2009.

- Analytic number theory, Institute for Advanced Study, December 2009.
- Mock modular forms in combinatorics and arithmetic geometry, American Institute of Mathematics, Palo Alto, CA, March 2010.

Teaching Experience

- Teaching Assistant, Talent Identification Program, Duke University, Summer 1998, 1999. *TIP is an intensive academic summer program for academically gifted seventh through tenth graders.*
 - English Teacher, America Eigo Gakuin, Kyoto, Japan, 1999-2001.
 - Teaching Assistant, Math 221 (Calculus I), Fall 2004.
 - Teaching Assistant, Math 222 (Calculus II), Spring 2005.
 - Teaching Assistant, Math 114 (Algebra and Trigonometry), Fall 2005.*
 - Instructor, Math 112 (College Algebra), Spring 2006.
 - Instructor, Math 112 (College Algebra), Fall 2006.*
 - Instructor, REU in Number Theory, Summer 2007, 2008.
 - Instructor, Math 42 (Calculus), Fall 2008.
 - Teaching Assistant, Arizona Winter School, Tucson, AZ, March 2010.
- * = teaching was judged as Superior by the TA Evaluation Committee.

Non-Academic Employment

- English Teacher, America Eigo Gakuin, Kyoto, Japan, 1999-2001. *Responsible for curriculum design as well as classroom instruction; taught individuals and small and large groups from ages three to adult.*
- Software Developer, /n software, inc., Durham, NC, 2002-2004. *Was lead developer for multiple commercial software projects in Java, Delphi, and Microsoft .NET.*

Personal

- Proficient in German and Japanese (spoken and written).
- Black Belt in Shorin-Ryu Karate, April 2007.

References

- Ken Ono (doctoral advisor)
Manasse Professor of Letters and Science, University of Wisconsin-Madison
480 Lincoln Drive, Madison, WI 53706; ono@math.wisc.edu
- Kannan Soundararajan (postdoctoral mentor)
Professor of Mathematics, Stanford University
450 Serra Mall, Building 380, Stanford, CA 94305; ksound@math.stanford.edu
- Additional references available upon request.