Curriculum Vitae

Personal Information:

Name: **Ramin Takloo-Bighash**

Work Address: Department of Mathematics, Statistics,Computer Science ScienceEngineering Offices (M/C 249)
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Education:

Ph.D. in Mathematics. Johns Hopkins University, May 2001.
Advisor: Professor Joseph A. Shalika
Thesis Title: *The Integral of Novodvorsky and the Local p-adic factors of the Spinor L-function for the Similitude Symplectic Group of Order Four*

M.A. in Mathematics. Johns Hopkins University, 1996.

B.Sc. in Mathematics. Sharif University of Technology, Tehran, Iran. September 1992 - May 1995.

Employment:

Assistant Professor, University of Illinois at Chicago, starting fall of 2007.

Assistant Professor, Princeton University, 2004-2007.

Instructor, Princeton University, 2001-2004.

Research:

Research Interests: Number Theory, Automorphic Forms, Arithmetic Geometry, Harmonic Analysis on Lie Groups.
Research Reports: http://www.math.princeton.edu/~rtakloo/preprints.html

Honors:

Winner of the Teaching Assistantship Excellence Award , Krieger School of Arts and Sciences, Johns Hopkins University, 2001.

Dean's Teaching Fellowship, School of Arts and Sciences, Johns Hopkins University, Spring 2000.

Winner of the William Merril Kelso Award of Excellence in the Teaching of Mathematics, Department of Mathematics, Johns Hopkins Univ., 1999.

Winner of the 18th National Mathematics Competition for Undergraduate Students, Sharif University of Technology, Tehran, Iran 1994.

Silver Medal Winner of the 33rd International Olympiad of Mathematics, Moscow 1992.

Grants and Scholarships:

National Science Foundation Grant 2007-2010 (Award number DMS-0701753).

Young Investigator Award from the National Security Agency, 2006-07 (Award number 215-6406).

Young Investigator Award from the National Security Agency, 2004-05 (Award number 215-6378).

Clay Mathematics Institute Liftoff Award, Clay Mathematics Institute (Research at Johns Hopkins Univ.), summer of 2001.

Full Tuition Fellowship and Stipend, Department of Mathematics, Johns Hopkins University, 1995-2001.

Full Undergraduate Scholarship, by the Institute for Studies in Theoretical Physics and Mathematics, Tehran, Iran 1993-1995.

Publications:

Books:

1. (With Steven J. Miller), An Invitation to Modern Number Theory, Princeton University Press, 2006, xx+503 pp.

2. (Co-author) An Introduction to Mathematical Olympiads (in Farsi), Sharif University Press, Tehran, Iran 1998.

Research Articles:

1. (with Nathan Kaplan) *Subrings of* $\mathbb{Z}^n$, in preparation.

2. *Distributions of rational points on semi-direct products*, in preparation.

3. (With Dipendra Prasad) *Bessel functionals for* GSp(4), in preparation.

4. (With Benjamin Elias and Lior Silberman), *Finding minimal permutation representations of finite groups*, preprint.

5. (With J. A. Shalika and Yu. Tschinkel), *Distribution of rational points on compactifications of semi-simple groups*, J. Amer. Math. Soc. 20 (2007), 1135-1186.

6. *Spinor L-functions, theta correspondence, and Bessel coefficients* with an appendix by Philippe Michel, Forum Math. 19 (2007), no. 3, 487-554.

7. *A remark on a recent paper of Ahlgren, Brendt, Yee, and Zaharescu*, Int. J. Number Theory 2 (2006), no. 1, 111–114.

8. (With Dominic Lanphier), On the Rankin-Cohen bracket of eigenforms, J. Ramanujan Math. Soc., **19** (2004), no. 4, 253-259.

9. (With Joseph Shalika and Yuri Tschinkel), *Distribution of rational points on compactifications of groups of rank 1*, in Arithmetic of higher-dimensional algebraic varieties (Palo Alto, CA, 2002), 205–233, Progr. Math., 226, Birkhuser Boston, Boston, MA, 2004.

10. *L-Function for the p-adic group GSp(4)*, American Journal of Mathematics, **122** (2000), no. 6, 1085-1120.

Expository Notes, Course Notes, Research Announcements

1. *Points of bounded height on algebraic varieties* (Course Notes).

2. *Bounds for spherical functions and arithmetic applications*, to appear in Eisenstein Series and Applications (Ed. W. T. Gan, S. S. Kudla, and Yu. Tschinkel).

3. *The spinor L-function*, Algebraic groups, 121–155, Universitätsverlag Göttingen, Göttingen, 2007.

4. (With Joe Shalika and Yuri Tschinkel), *Rational Points and Automorphic Forms*, in Contributions to Automorphic Forms, Geometry and Number Theory, Shalikafest 2002 (ed. H. Hida, D. Ramakrishnan, and F. Shahidi).

5. *Some results on L-functions for the similitude symplectic group of order four* GSp(4), in Siavash Shahshahani's Sixtieth (ed. K. Lajevardi, P. Safari, and Y. Tabesh), May 2002.

6. *A Geometric Inequality* (in Persian), Olympiad, Tehran, Iran 1994.

7. *The Fundamental Theorem of Algebra* (in Persian), Math. Journal of Sharif Univ., Tehran, Iran 1993.

Other Articles:

1. *On research and writing papers* (in Farsi), Farhang va Andisheye Riyazi (Mathematics Culture and Thought), Tehran, Iran 2007.

2. *The tale of two cousins*, available at
`http://www.iranian.com/Arts/2007/May/Women/index.html`

3. *The importance of research in math education* (in Farsi), editorial note, Nashriyeye Riyaziyat (Mathematics Magazine), Tehran, Iran 2007.

4. *Ziarate Emamzadeh* (in Farsi), available at
`http://www.iranian.com/Arts/2007/April/Emamzadeh/index.html`

5. *How's the weather?*, available at
`http://www.iranian.com/Diaspora/2004/June/RTB/index.html`

6. *The Wrong Way*, available at
   `http://www.iranian.com/Ebadi/2004/May/Reply/index.html`

7. *Abstract Poetry* (in Persian), Cultural Letter of Sharif, Sharif University of Technology, Tehran, Iran 1995.

8. *Maybe Next Time?: Report on the 25th Annual Mathematics Conference of Iran* (in Persian), Mathematics Journal, University Publication Center, Tehran, Iran 1994.

Talks:

Seminars:

Over the past six years I have given invited talks at the following institutions: New York University, CUNY Graduate Center (New York Number Theory Seminar), Center for Basic Sciences (Zanjan, Iran), Shahid Chamran University (Ahwaz, Iran), IPM (Tehran, Iran), Towson University, University of Illinois at Chicago, UMD at College Park (three times), Caltech, Princeton (twice), UC San Diego, JHU, Duke, Brown (twice), Ohio State, Purdue, University of Minnesota, University of Pennsylvania.

Lecture Series:

1. A series of ten talks on the Distribution of Rational Points at Sharif University of Technology (Iran), June and July 2006.

2. Five talks in an undergraduate summer school (Escola Diagonal 2005) in Lisbon (Portugal), September 2005.

3. A series of four talk in the Summer School on Algebraic Groups, Gottingen (Germany), July 2005.

Conferences and workshops:

1. Special Session on Automorphic Forms: Representation Theory of p-adic and Adelic Groups, AMS Sectional Meeting, Chicago, IL, October 2007.

2. Special session on Automorphic Forms and Arithmetic Geometry, AMS Sectional Meeting, Hoboken, NJ, April 2007.

3. Workshop on Analytic Methods in Diophtantine Equations (organized by David, Duke, Granville, Tschinkel), Banff, Canada, May 2006.

4. 30th Midwest Representation Theory and Automorphic Forms Conference, University of Chicago, March 2006.

5. Weekend conference in Luso (Portugal), September 2005.

6. Workshop on Eisenstein series and applications, Palo Alto (organized by W.T. Gan, S. Kudla, and Yu. Tschinkel), August 2005.

7. Special session on Analytic Number Theory and Modular Forms, AMS sectional meeting, Lawrenceville, NJ, April 2004.

8. AMS Joint Meeting Special Session on Modular Forms and Elliptic Curves, Baltimore, January 2003.

9. Workshop on Rational Points on Higher Dimensional Varieties, American Institute of Mathematics, Palo Alto, CA, December 2002.

10. PCMI Research Program on Automorphic Forms, Park City, Utah, July 2002.

11. JAMI Conference on Automorphic Forms and Shimura Varieties, JHU, March 2001.

12. Workshop on Automorphic Forms and Related Topics, Boulder, CO, March 2000.

Teaching Experiences:

• CTY, Instructor (Advanced Cryptography), Summer of 2007.
RSA, Some information theory, DES, and classical cryptosystems.

• Department of Near Eastern Studies, Princeton University: Contemporary Persian Poetry (Post WWII), Spring 2007.

• Deparment of Mathematics, Princeton University: Galois Theory, "Equations, Numbers, and Proofs", Representation theory of real Lie groups (Graduate Course), Representation Theory of GL(n) over a p-adic field (Graduate Course), Real Analysis, Ordinary Differential Equations, Topics in Algebra, Algebra, Complex Analysis and Applications, Rankin-Selberg Method

(Graduate course), Irrational Mathematics (New Course)

• "Undergraduate Math Laboratory" (with Steven Miller), Fall 2002.
A research seminar for junior math majors. The emphasis was Diophantine approximations and Roth's theorem.

• Graduate Course Assistant (with Akshay Venkatesh), PCMI, July 2002.
Helped Armand Borel with his graduate course 'Automorphic forms on reductive groups', held problem-solving sessions, and prepared lecture-notes to appear in the proceedings of the summer school.

• Department of Mathematics, JHU: Graduate Teaching Assistant (1995-2001), Undergraduate Research in Mathematics, Number Theory, Putnam Problem Solving, Irrational Numbers, William L. Putnam Competition Camp Coach (1996-2000; Hopkins' team ranked 10 in 1998).

• CTY, Johns Hopkins University: Instructor (Individually Paced Mathematics Sequence, 1999 and 2000).

• Instructor, Shahid Soltani High School, The National Center for Talented Students, Karaj, Iran 1994.

• Instructor, The Iranian National Center for Scientific Olympiads, 1992-1995.

Visits:

Purdue University, October 2002.
University of Maryland at College Park, Summer 2003.
Ohio State University, March 2004.
Johns Hopkins, Summer 2004.
Brown University, March 2004.
Univ. Gottingen, June-July 2005.
IPM, Tehran June-July 2006.

Other Professional Activities:

• Served on the Graduate Admissions Committee, Princeton Mathematics, 2006.
• "Freshman-Sophomore Advisor", Wilson College, Princeton University, 2002-2007.
• Organizer of a special session on Modular Forms and Related Topics at the Lawrenceville AMS meeting with Stephen D. Miller, April 2004.
• Member of the American Mathematical Society
• Reviewer for Mathematical Reviews
• Have refereed for the American Journal of Mathematics, Transactions of the American Mathematical Society, and Canadian Journal of Mathematics
• Organizer of the IAS/Princeton Number Theory Seminar, Academic year 2002-2007.
• Organizer of an informal seminar on Perverse Sheaves, since 2004.
• Graduate thesis committee member (Farrell Brumley 2004, Lior Silberman 2005)
• Served on several graduate general exams committees at Princeton (2004-2007)
• Served on several undergraduate senior thesis committees at Princeton (2001-2007)

Students Supervised:

• Matthew Ong, Junior project on Class Field Theory, Spring 2002.
• Adam Durrett, Senior project "On the modularity of a certain Galois representation", Academic year 2002-2003.
• Rahul Bhargava, Junior project on the Lone Runner Conjecture, Spring 2003.
• Felice Kwan, Senior project "McDonald's Formula", Academic year 2003-2004.
• Matthew Michelini, Senior project "The exceptional set in the Gauss-Kuzmin theorem", Academic year 2003-2004.
• Benjamin Elias, Senior project "Minimal permutation representations of p-groups", Academic year 2004-2005.
• Justin Almeida, Senior project "Li's constants and the Riemann hypothesis", Academic year 2004-2005.
• Joe Zipkin, Junior project on Harmonic analysis on Lie groups, Spring

2006.
• Nathan Kaplan, Junior project on Algebraic Geometry, Spring 2006.
• Andre Negut, "A uniformity statement for Whittaker function on the p-adic GL(n)", summer 2006.
• Seth Blumberg, Project on Sieve methods, summer 2006.
• Nathan Kaplan, Senior project "Subrings of $\mathbb{Z}^n$", 2006-2007. Nathan Kaplan was awarded the Morgan Prize for Research by an undergraduate by the American Mathematical Society at the 2008 joint AMS-MAA meeting in San Diego.

Other activities:

• Secretary and Director of Cultural Affairs, Iranian-American Cultural Society of Maryland, since June 2007.

• Little Persia Task Force, since April 2007.

• Vice-President, Iranian-American Cultural Society of Maryland, 2005-2007.

• Lead Vocalist, Nava Music Ensemble (part of Persian National Music Ensemble), Baltimore, MD since 2006.

• Co-organizer, Tea Party, Baltimore, since August 2004.

• Volunteer, Living Classrooms Foundation, Project SERVE (Crossroads School Project), 2004-2005.

Languages:

Fluent in English and Persian, and some French and Arabic.

Other interests:

Iranian traditional music (vocals and tonbak), traveling, classical guitar, cooking.