

Curriculum Vitae: Apoorva Khare

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University of California at Riverside
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Employment

2006 – present **University of California at Riverside**, Riverside, CA
Visiting Assistant Professor in Mathematics

Education

2000 – 2006 **University of Chicago**, Chicago, IL
Ph.D. in Mathematics, June 2006
(Thesis Advisor: Professor Victor Ginzburg)
M.S. in Mathematics, December 2001
Topic Exam passed in Spring 2002, on *Semisimple Lie algebras and their representations*

1997 – 2000 **Indian Statistical Institute**, Kolkata, India
B.Stat. (Hons.), June 2000: Graduated First Class with Distinction

Teaching Experience

2007 – 2008 **Visiting Assistant Professor** in Mathematics, University of California at Riverside
Mathematics 8B: Introduction to College Mathematics for Science
Mathematics 10B: Calculus: Several Variables
Mathematics 9C (2 Sections): First Year Calculus

2006 – 2007 **Visiting Assistant Professor** in Mathematics, University of California at Riverside
Mathematics 9B: First Year Calculus
Mathematics 46: Ordinary Differential Equations
Mathematics 8B: Introduction to College Mathematics for Science
Mathematics 23: Applied Matrix Algebra
Mathematics 9C: First Year Calculus
Mathematics 10A: Calculus: Several Variables

2005 – 2006 **Lecturer** in Mathematics, University of Chicago
Mathematics 153: Calculus - III
Mathematics 195, 196: Math. Methods for the Social Sciences - I,II

Teaching Experience (continued)

2004 – 2005	Lecturer in Mathematics, University of Chicago Mathematics 151, 152: Calculus - I, II Mathematics 195: Mathematical Methods for the Social Sciences - I
2003 – 2004	Lecturer in Mathematics, University of Chicago Mathematics 151, 152, 153: Calculus - I, II, III
2002 – 2003	Lecturer in Mathematics, University of Chicago Mathematics 151, 152, 153: Calculus - I, II, III
2001 – 2002	College Fellow in Mathematics, University of Chicago Math. 175: Elementary Number Theory, Mentor: R. Narasimhan Math. 203: Analysis in \mathbb{R}^n - I, Mentor: S. Webster Math. 204: Analysis in \mathbb{R}^n - II, Mentor: Y. Yuan

Synergistic activities

2006 – 2007	Mentored graduate students at University of California, Riverside, through (but not limited to) the Lie Theory Seminar.
2005 – 2006	Mentor in the Directed Reading Program, Fall 2005 and Spring 2006 Mentored Philip M. Brunetti on selected topics in elementary number theory (including Mobius functions on partially ordered sets); and Gabriel Gaster on the Banach Tarski Paradox and related topics.
2001 – 2002	Helped organize a weekly graduate student seminar, University of Chicago.

Programs attended

Summers of 1996, 1997	<i>Homi Bhabha Center for Science Education, Mumbai, India:</i> International Mathematical Olympiad Training Camp
Summers of 1998–2000	<i>Tata Institute of Fundamental Research, Mumbai, India:</i> Nurture Program in Mathematics
December 1999	<i>Tata Institute of Fundamental Research, Mumbai, India:</i> Visiting Students' Research Program in Mathematics

Conferences attended

Aug 31 – Sep 4, 2003	An International Conference on “The Unity of Mathematics” (in honor of I.M. Gelfand), Harvard University
Dec 17–19, 2003	Joint AMS-India Conference, I.I.Sc., Bangalore, India
May 18–22, 2004	Conference on Infinite-Dimensional Aspects of Representation Theory and Applications, University of Virginia (Charlottesville)
May 17–21, 2005	Lie Algebras, VOAs and their applications: A conference in honor of Robert L. Wilson and James Lepowsky (on their 60th birthdays), North Carolina State University (Raleigh)
May 26–27, 2006	Algebra And Representation Theory - Graduate Student Conference, Kansas State University (Manhattan, KS)
Nov 3–4, 2006	AMS 2006 Fall Southeastern Section Meeting - Special Session on Combinatorial Representation Theory, University of Arkansas (Fayetteville)
Apr 21–22, 2007	Conference on Lie groups, Lie algebras, and their representations, University of California at Santa Barbara

Conferences attended (continued)

May 9–11, 2007	Workshop on Representation Theory and Geometry 2007, University of California at Berkeley
Oct 5–6, 2007	AMS 2007 Fall Central Section Meeting - Special Session on Hopf Algebras and Related Areas, De Paul University (Chicago)
Jan 18–20, 2008	Symmetry in Mathematics and Physics - Professor Varadarajan's 70th birthday conference, UCLA (Los Angeles) (I attended on Jan 18)
Mar 10–14, 2008	Workshop on Lie Theory, Mathematical Sciences Research Institute (MSRI) at Berkeley
Mar 28–30, 2008	AMS 2008 Spring Southeastern Section Meeting - Special Session on Geometric and Combinatorial Representation Theory, Louisiana State University (Baton Rouge)
May 3–4, 2008	AMS 2008 Spring Western Section Meeting - Special Session on Hopf Algebras and Quantum Groups Claremont McKenna College

Invited Lectures

Dec 20, 2004	Tata Institute of Fundamental Research (India)
May 19, 2005	North Carolina State University: I talked at the conference on "Lie Algebras, VOAs and their applications"
May 27, 2006	Kansas State University: I talked at the Graduate Student Conference on "Algebra And Representation Theory"
Nov 4, 2006	University of Arkansas at Fayetteville: I talked at the "Special Session on Combinatorial Representation Theory" in the AMS 2006 Fall Southeastern Section Meeting
May 9, 2007	University of California at Berkeley: I talked at the "Workshop on Representation Theory and Geometry 2007"
Dec 18,20, 2007	National Institute of Science Education and Research, and Institute of Mathematics and Applications (India)
Mar 29, 2008	Louisiana State University at Baton Rouge: I talked at the "Special Session on Geometric and Combinatorial Representation Theory" in the AMS 2008 Spring Southeastern Section Meeting
May 3, 2008	Claremont McKenna College: I talked at the "Special Session on Hopf Algebras and Quantum Groups" in the AMS 2008 Spring Western Section Meeting

Awards and Scholarships

1995, 1996	Cash awards, from the Orissa Mathematical Society, for securing the first rank in the Regional Mathematics Olympiads
1995-1997	National Talent Search (NTSE) Scholarship, from the NCERT, India
1996	Indian National Mathematical Olympiad (INMO) Scholarship
1997-2000	Student Fellowship, from the Indian Statistical Institute, Kolkata
1998	Cash award, from the Indian Statistical Institute, Kolkata, for academic excellence
1998-1999	Cash awards, from the National Board of Higher Mathematics, India

Awards and Scholarships (continued)

2000-2002 McCormick Fellowship, from the University of Chicago

Publications and Preprints

- 1997 *Divisibility tests*, Furman University Electronic Journal of Undergraduate Mathematics, Vol. **3**, Pages 1–5.
- 2005 *Category \mathcal{O} over a deformation of the symplectic oscillator algebra*, Journal of Pure and Applied Algebra **195** No. 2 (2005), 131–166; [math.RT/0309251](#).
- 2006 *Category \mathcal{O} over the symplectic oscillator algebra*, Ph. D. Thesis, University of Chicago, June 2006.
- 2007 *Quantized symplectic oscillator algebras of rank one*, joint with Wee Liang Gan; Journal of Algebra **310** No. 2 (2007), 671–707; [math.RT/0405176](#).
- 2007 *Divisibility tests and recurring decimals in Euclidean domains*, JP Journal of Algebra, Number Theory, and Applications (JPANTA) **7** No. 1 (2007), 1–32; [math.NT/0406025](#).
- Preprint, 2005 *Axiomatic framework for the BGG Category \mathcal{O}* , [math.RT/0502227](#).
- Accepted *Category \mathcal{O} over skew group rings*, accepted for publication in *Communications in Algebra*; preprint under revision at <http://math.ucr.edu/~apoorva/job/skew.pdf>.
- To appear *The BGG Category \mathcal{O}* , to appear in the Encyclopedia of Mathematics (Michiel Hazewinkel, Ed.), Kluwer Academic Publishers.
- Preprint, 2007 *The sum of a finite group of weights of a Hopf algebra*, [math.RA/0701467](#).
- Preprint, 2007 *Drinfeld-Hecke algebras over cocommutative algebras*, [arxiv:0705.2067](#).
- Preprint, 2008 *Vector spaces, modules over Chinese rings, and monoids as unions of proper subobjects*, [arxiv:0803.2746](#).