Mokshay M. Madiman

Curriculum Vitae
(as of March 15, 2012)

Department of Statistics
Yale University
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New Haven, CT 06511

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EDUCATION

BROWN UNIVERSITY, Providence RI
Ph.D., Applied Mathematics 09/2005
Advisor: Ioannis Kontoyiannis

BROWN UNIVERSITY, Providence RI
Master of Science, Applied Mathematics 05/2001
GPA: 4.0 / 4.0

INDIAN INSTITUTE OF TECHNOLOGY – BOMBAY, Mumbai, India
Bachelor of Technology, Electrical Engineering 06/1999
First Class

EMPLOYMENT

DEPARTMENT OF STATISTICS, YALE UNIVERSITY
Assistant Professor 07/2006–present
Courtesy Assistant Professor of Applied Mathematics 07/2007–present

TATA INSTITUTE OF FUNDAMENTAL RESEARCH, Mumbai, India
Visiting Fellow at the School of Technology and Computer Science 01/2007–05/2007

DEPARTMENT OF STATISTICS, YALE UNIVERSITY
Gibbs Assistant Professor 07/2005–06/2006

DIVISION OF APPLIED MATHEMATICS, BROWN UNIVERSITY
Research Assistant 06/2002–08/2005

CORNING INC., Corning NY
Summer Intern 06–08/2000

INSTITUTE OF MATHEMATICAL SCIENCES, Chennai, India
Summer Research Intern 05–07/1998

RESEARCH INTERESTS

Probability	Concentration of measure, Probabilistic approximation bounds, Limit laws, Exchangeability
Statistics	Distributed inference, Model selection, Relevance determination, Data pricing, Inference for large alphabets
"Pure" Mathematics	Convex geometry, Functional inequalities, Additive combinatorics
Information theory	Universal data compression, Multiuser information theory

HONORS AND AWARDS

Research Grants

NSF CAREER Grant DMS-1056996 *2011*
Award of $609,000 over 5 years jointly from Probability and Statistics programs at NSF ($124,111 awarded to date); Title: "CAREER: An integrated probabilistic approach to discrete and continuous extremal problems via information theory"

NSF Grant CCF-1065494 *2011*
Award of $400,471 over 4 years, awarded in full by the NSF Division of Computing and Communication Foundations; Title: "CIF: Medium: Collaborative Research: Information theory and statistical inference from large-alphabet data"; Collaborative project with A. Orlitsky and N. P. Santhanam

General Awards and Honors

Visiting Fellowship, Isaac Newton Institute of Mathematical Sciences *2011*
Award towards participation in the "Discrete Analysis" program in Cambridge, UK for 6 weeks in May–July 2011

Invited Speaker, Conference on Analysis in honor of K. R. Parthasarathy *2011*
Organized by Indian Statistical Institute, New Delhi, in December 2011 on the occasion of Professor Parthasarathy's 75th birthday

Junior Faculty Fellowship, Yale University *2009*
Award towards a sabbatical in the spring semester of 2009

Travel Awards

Beneficiary of various NSF travel grants for young researchers *2006–2008*
– To give an invited presentation at the Workshop on Combinatorial and Probabilistic Inequalities (part of the Program on Combinatorics and Statistical Mechanics) at the Isaac Newton Institute for Mathematical Sciences in Cambridge, UK, June 2008
– To speak at Young Researchers Symposium and attend International Congress on Mathematical Physics in Rio de Janeiro, Brazil, August 2006

Laha Travel Award, Institute of Mathematical Statistics *2006*
Award to present a paper at the IMS Annual Meeting in Rio de Janeiro, Brazil, August 2006

PUBLICATIONS

Journal papers and book chapters are numbered together, but conference papers are separately numbered.

Journal Papers

J-1 I. Kontoyiannis and M. Madiman: "Measure concentration for compound Poisson distributions". *Electronic Communications in Probability*, Vol. 11, pp. 45-57, 2006. [arXiv:math/0506435]

J-2 M. Madiman and A. R. Barron: "Generalized Entropy Power Inequalities and Monotonicity Properties of Information". *IEEE Transactions on Information Theory*, Vol. 53, no. 7, pp. 2317-2329, 2007. [arXiv:cs/0605047]

J-3 M. Madiman: "Cores of Cooperative Games in Information Theory". *EURASIP Journal on Wireless Communications and Networking*, Special issue on "Theory and Applications in Multiuser/Multiterminal Communications", article no. 318704, 2008. [arXiv:0901.0062]

J-4 M. Madiman and P. Tetali: "Information inequalities for joint distributions, with interpretations and applications". *IEEE Transactions on Information Theory*, Vol. 56, no. 6, pp. 2699–2713, June 2010. [arXiv:0901.0044]

J-5 A. Barbour, O. Johnson, I. Kontoyiannis and M. Madiman: "Compound Poisson approximation via information functionals". *Electronic Journal of Probability*, Vol. 15, paper no. 42, pp. 1344-1368, 2010. [arXiv:1004.3692]

J-6 S. Bobkov and M. Madiman: "Dimensional behaviour of entropy and information". *Comptes Rendus de l'Académies des Sciences Paris, Série I Mathematique*, Vol. 349, pp. 201–204, Février 2011.

J-7 S. Bobkov and M. Madiman: "The entropy per coordinate of a random vector is highly constrained under convexity conditions". *IEEE Transactions on Information Theory*, Vol. 57, no. 8, pp. 4940–4954, August 2011. [arXiv:1006.2883]

J-8 S. Bobkov and M. Madiman: "Concentration of the information in data with log-concave distributions". *Annals of Probability*, Vol. 39, no. 4, pp. 1528–1543, 2011. [arXiv:1012.5457]

J-9 M. Madiman, A. Marcus, and P. Tetali: "Entropy and set cardinality inequalities for partition-determined functions". Published online (print version to appear in 2012) in *Random Structures and Algorithms*, 2011. [arXiv:0901.0055]

J-10 O. Johnson, I. Kontoyiannis and M. Madiman: "Log-concavity, ultra-log-concavity, and a maximum entropy property of discrete compound Poisson measures". Published online (print version to appear in 2012) in the JCDM 2009 special issue of *Discrete Applied Mathematics* (edited by D. J. Kleitman, A. Shastri, V. T. Sós), 2011. [arXiv:0912.0581]

J-11 S. Bobkov and M. Madiman: "Reverse Brunn-Minkowski and reverse entropy power inequalities for convex measures". *Journal of Functional Analysis*, Vol. 262, no.7, pp. 3309–3339, April 2012. [arXiv:1109.5287]

Book Chapters (published and submitted)

J-12 S. Bobkov, M. Madiman and L. Wang: "Fractional generalizations of Young and Brunn-Minkowski Inequalities". *Concentration, Functional Inequalities and Isoperimetry*, pp. 35–53, Contemporary Mathematics 545, (edited by C. Houdré, M. Ledoux, E. Milman, and M. Milman), American Mathematical Society, 2011. [arXiv:1006.2884]

J-13 S. Bobkov and M. Madiman: "On reversibility of the entropy power inequality". Submitted to *Festschrift in honor of F. Götze's 60th birthday.* [arXiv:1111.6807]

Preprints/Journal papers in preparation

J-14 I. Kontoyiannis and M. Madiman: "Sumset and inverse sumset inequalities for differential entropy and mutual information".

J-15 M. Harrison, I. Kontoyiannis, and M. Madiman: "A Minimum Description Length Proposal for Lossy Data Compression".

J-16 M. Madiman, A. R. Barron, A. M. Kagan, and T. Yu: "Fundamental limits for distributed estimation: the case of a location parameter".

J-17 A. M. Kagan, T. Yu, A. R. Barron, and M. Madiman: "Contribution to the theory of Pitman estimators".

J-18 M. Madiman: "Determinant and trace inequalities for sums of positive-definite matrices".

J-19 M. Madiman: "A study of revenue allocation among data vendors when the value of the data is measured by its usefulness for inference".

J-20 J. Ferguson, J. T. Chang, and M. Madiman: "A loss-robustness approach to the problem of determining relevant factors".

J-21 S. Bobkov and M. Madiman: "When can one invert Hölder's inequality? (and why one may want to)".

J-22 S. Bobkov and M. Madiman: "Capacity bounds for channels with convex noises".

J-23 M. Madiman, O. Johnson and I. Kontoyiannis: "Information, Estimation and Approximation for Poisson and related channels".

J-24 A. Deo and M. Madiman: "Judging generics".

Invited Conference Papers

C-1 M. Madiman, A. R. Barron, A. M. Kagan and T. Yu: "Minimax risks for distributed estimation of the background in a field of noise sources". *Proceedings of the Second International Workshop on Information Theory for Sensor Networks (WITS '08)*, Santorini Island, Greece, June 2008.

C-2 M. Madiman, A. Marcus, and P. Tetali: "Information-theoretic inequalities in additive combinatorics". *Proceedings of the 2010 IEEE Information Theory Workshop*, Cairo, Egypt, January 2010.

C-3 M. Madiman: "Fundamental limits for distributed estimation using a sensor field". *Proceedings of the 2010 Allerton Conference on Control, Communication and Computing*, Monticello, Illinois, September 2010.

Peer-Reviewed Conference Papers

C-4 M. Madiman, M. Harrison, I. Kontoyiannis: "Minimum Description Length vs. Maximum Likelihood in Lossy Data Compression". *Proceedings of the 2004 IEEE International Symposium on Information Theory*, Chicago, Illinois, June-July 2004.

C-5 I. Kontoyiannis and M. Madiman: "Entropy, Compound Poisson Approximation, Log-Sobolev inequalities, and Measure Concentration". *Proceedings of the 2004 IEEE Information Theory Workshop*, San Antonio, Texas, October 2004.

C-6 M. Madiman and I. Kontoyiannis: "Concentration and Relative Entropy for Compound Poisson Distributions". *Proceedings of the 2005 IEEE International Symposium on Information Theory*, Adelaide, Australia, September 2005.

C-7 M. Madiman and A. R. Barron: "The Monotonicity of Information in the Central Limit Theorem and Entropy Power Inequalities". *Proceedings of the 2006 IEEE International Symposium on Information Theory*, Seattle, Washington, July 2006.

C-8 M. Madiman, O. Johnson and I. Kontoyiannis: "Fisher Information, Compound Poisson approximation and the Poisson Channel". *Proceedings of the 2007 IEEE International Symposium on Information Theory*, Nice, France, June 2007.

C-9 M. Madiman and P. Tetali: "Sandwich bounds for joint entropy". *Proceedings of the 2007 IEEE International Symposium on Information Theory*, Nice, France, June 2007.

C-10 M. Madiman: "On the entropy of sums". *Proceedings of the 2008 IEEE Information Theory Workshop*, Porto, Portugal, May 2008.

C-11 M. Madiman: "Playing Games: A Fresh Look at Rate and Capacity Regions". *Proceedings of the 2008 IEEE International Symposium on Information Theory*, Toronto, Canada, July 2008.

C-12 M. Madiman, A. R. Barron, A. M. Kagan, and T. Yu: "A model for pricing data bundles based on minimax risks for estimation of a location parameter". *Proceedings of the 2009 IEEE Information Theory Workshop*, Volos, Greece, June 2009.

C-13 M. Madiman and F. Ghassemi: "The entropy power of a sum is fractionally superadditive". *Proceedings of the 2009 IEEE International Symposium on Information Theory*, Seoul, Korea, June-July 2009.

C-14 O. Johnson, I. Kontoyiannis and M. Madiman: "A Criterion for the Compound Poisson Distribution to be Maximum Entropy". *Proceedings of the 2009 IEEE International Symposium on Information Theory*, Seoul, Korea, June-July 2009.

C-15 A. Deo and M. Madiman: "Generic sentences and subjective probability". Abstract presented at the *20th Semantics and Linguistic Theory (SALT) conference*, Vancouver, Canada, April 2010. [**22.5% acceptance rate**]

C-16 M. Madiman and I. Kontoyiannis: "The Entropies of the Sum and the Difference of Two IID Random Variables are Not Too Different". *Proceedings of the 2010 IEEE International Symposium on Information Theory*, Austin, Texas, June 2010.

C-17 S. Bobkov and M. Madiman: "Entropy and the hyperplane conjecture in convex geometry". *Proceedings of the 2010 IEEE International Symposium on Information Theory*, Austin, Texas, June 2010.

Papers Submitted to Conferences

C-18 I. Kontoyiannis and M. Madiman: "Sumset inequalities for differential entropy and mutual information". Submitted to ISIT 2012.

C-19 S. Bobkov and M. Madiman: "An equipartition property for high-dimensional log-concave distributions". Submitted to ISIT 2012.

Theses and Unpublished Technical Reports

T-1 M. Madiman: "Topics in Information Theory, Probability and Statistics", *Ph.D. Dissertation*, Brown University, May 2006.

T-2 O. Johnson, I. Kontoyiannis and M. Madiman: "On the entropy and log-concavity of compound Poisson measures". May 2008. [`arxiv:0805.4112`].

T-3 M. Madiman and I. Kontoyiannis: "Second-order properties of lossy likelihoods and the MLE/MDL dichotomy in lossy compression". *Brown University APPTS Report #04-5*, May 2004.

T-4 M. Madiman: "Singularities in Mechanisms". *B.Tech. Thesis*, Indian Institute of Technology-Bombay, May 1999.

T-5 M. Madiman: "Potential Formulations of Electromagnetism", *B.Tech. Seminar Report*, Indian Institute of Technology-Bombay, May 1998.

General Audience

G-1 M. Madiman: "Reaching for the Night Sky: Research in Applied Mathematics", *The Catalyst*, Special Edition on Science and the Liberal Arts at Brown University, June 2003.

TEACHING

Courses taught

All the courses below were taught at the Department of Statistics, Yale University. Course outlines can be found at `http://www.stat.yale.edu/~mm888/teaching.html`.

Primarily Undergraduate Courses

Introduction to Statistics: Data Analysis (STAT 106/506)	*Fall 2008*
Topics in Applied Mathematics (AMTH 252)	*Spring 2006*

Courses designed for both Undergraduates and Graduates

Probability Theory with Applications (STAT 241/541, MATH 241)	*Fall 2010*
Information Theory (STAT 364/664, AMTH 364, EENG 454)	*Spring 2010, Spring 2012*
Theory of Statistics (STAT 242/542, MATH 242)	*Spring 2008, Spring 2010*
Optimization and Convexity (AMTH 237/537)	*Fall 2006*
Stochastic Processes (STAT 251/551)	*Spring 2006*

Primarily Graduate Courses

Advanced Probability (STAT 330/600, MATH 330)	*Spring 2012*
Probabilistic Convex Geometry (STAT 604, co-taught with R. Vitale)	*Spring 2011*
Statistical Inference (STAT 610)	*Fall 2008, Fall 2009, Fall 2010*
Deterministic and Stochastic Optimization (STAT 637)	*Fall 2007*
Information and Statistics (STAT 669, co-taught with A. R. Barron)	*Fall 2006*
Information and Probability (STAT 668, co-taught with A. R. Barron)	*Fall 2005*

Other Experience and Training

Invited Lecturer, Department of Electrical Engineering, IIT Bombay *Spring 2007*
Short course: Probabilistic approximations and random geometric graphs

Teaching Program, Sheridan Center for Teaching & Learning in Higher Education, Brown University *2004-05*

A program for future university instructors, designed to help develop a reflective teaching practice. Included workshops and lectures on various aspects of teaching in a university setting, such as syllabus construction, instructional assessment, and teaching to variation in the way students learn. Also included an Individual Teaching Consultation, in which experts videotaped a lecture by me, and gave constructive feedback on my teaching and how well I achieved my stated goals for the class. Finally, a committee of faculty members and graduate students dissected a 5-minute lecture by me to give me feedback on my teaching style.

Guest Lecturer, Division of Applied Mathematics, Brown University *Fall 2004*
Taught 6 classes on rate-distortion theory to fill in for Prof. Stuart Geman

Teaching Assistant, Division of Applied Mathematics, Brown University *2000–2002*
Served as TA for undergraduate courses on Ordinary Differential Equations; Introduction to Probability and Statistics; and Operations Research: Deterministic Methods

TALKS

Conference Talks

46th Annual Conference on Information Sciences and Systems, Princeton, New Jersey. [**Invited**]

Conference on Analysis in honor of Professor K. R. Parthasarathy's 75th birthday, Indian Statistical Institute, New Delhi. [**Invited**]

Workshop on Groups and Additive Combinatorics, Gregynog Hall, Wales, UK.

Forty-Eighth Annual Allerton Conference on Communication, Control, and Computing, Monticello, Illinois. [**Invited**]

International Congress of Mathematicians 2010, Hyderabad, India.

ICM Satellite Conference on Probability and Stochastic Processes, Indian Statistical Institute, Bangalore, India.

2010 IEEE International Symposium on Information Theory, Austin, Texas. (two talks)

New England Statistics Symposium 2010, Harvard University, Cambridge, Massachusetts. [**Invited**]

2010 IEEE Information Theory Workshop, Cairo, Egypt. [**Invited**]

2009 IEEE International Symposium on Information Theory, Seoul, Korea. (two talks)

2009 IEEE Information Theory Workshop, Volos, Greece.

Workshop on Graphical Models, Statistical Inference and Algorithms, Tata Institute of Fundamental Research (TIFR), Mumbai, India. [**Invited**]

2009 Jubilee Conference on Discrete Mathematics (JCDM), Banasthali University, Rajasthan, India.

Second EPFL-UMLV Workshop on Entropy, Ecole Polytechnique Federale Lausanne (EPFL), Lausanne, Switzerland. [**Invited**]

17th International Workshop in Matrices and Statistics (IWMS 2008) honoring T. W. Anderson's 90th birthday, Tomar, Portugal.

7th World Congress in Probability and Statistics, Singapore.

Workshop on Combinatorial and Probabilistic Inequalities, Isaac Newton Institute for Mathematical Sciences, Cambridge, UK. [**Invited**]

Second International Workshop on Information Theory for Sensor Networks (WITS 2008), Santorini Island, Greece. [**Invited**]

2008 IEEE Information Theory Workshop, Porto, Portugal.

2007 Joint Statistical Meetings, Salt Lake City, Utah.

2007 IEEE International Symposium on Information Theory, Nice, France. (two talks)

Young Researchers Symposium, International Congress on Mathematical Physics 2006, Rio de Janeiro, Brazil.

IMS Annual Meeting 2006, Instituto Nacional de Matemática Pura e Aplicada (IMPA), Rio de Janeiro, Brazil.

New England Statistics Symposium 2005, University of Connecticut, Storrs.

2004 IEEE Information Theory Workshop, San Antonio, Texas.

2004 IEEE International Symposium on Information Theory, Chicago, Illinois.

Seminar Talks

2012:

Seminar, School of Mathematics, University of Edinburgh, Scotland.

Probability Seminar, Department of Mathematics, University of Pennsylvania, Philadelphia.

Seminar, Department of Mathematical Sciences, University of Delaware, Newark.

2011:

Statistics Seminar, Department of Statistics, Columbia University, New York.
Probability Seminar, School of Mathematics, University of Minnesota, Minneapolis.
Newton Institute Seminar, Isaac Newton Institute for Mathematical Sciences, Cambridge, UK.
Probability Seminar, Duke University, Durham, North Carolina.

2010:

Probability Seminar, School of Mathematics, University of Minnesota, Minneapolis.
Seminar, Department of Electrical Engineering, IIT Bombay.
Industrial Engineering and Operations Research Seminar, IIT Bombay.
Seminar, TIFR Center for Applicable Mathematics, Bengaluru, India.
School of Technology and Computer Science Seminar, Tata Institute of Fundamental Research, Mumbai, India.
EE Seminar, Department of Electrical Engineering, IIT Madras.
Colloquium, Department of Mathematics, Yale University.
Probability Seminar, Department of Mathematics, University of British Columbia, Vancouver, Canada.

2009:

Seminar, School of Mathematics, Georgia Institute of Technology, Atlanta.
Information Sciences and Systems (ISS) Seminar, Princeton University, New Jersey.
Applied Probability Seminar, Massachussetts Institute of Technology, Cambridge.
Probability Seminar, School of Mathematics, University of Minnesota, Minneapolis.
Stat-Math Seminar, Indian Statistical Institute, New Delhi, India.

2008:

Seminar, Centrum voor Wiskunde Informatica (CWI), Amsterdam.
Probability Seminar, Heriot-Watt University, Edinburgh, UK.
Mathematics Seminar, Connecticut College, New London.
Illinois Center for Wireless Systems (ICWS) Seminar, University of Illinois at Urbana-Champaign.
Communications and Networking Seminar, Department of Electrical Engineering, Yale University.

2007:

Statistics Colloquium, University of Connecticut, Storrs.
Algorithmics Group Seminar, Institüt fur Informatik, Georg-August-Universität Göttingen, Germany.
Information Theory Group Seminar, Institute for Mathematics, Universität Bielefeld, Germany.
Mathematical Methods in Physics Group Seminar, Institute for Applied Mathematics, Universität Bonn, Germany.
School of Mathematics Seminar, Tata Institute of Fundamental Research, Mumbai, India.
Stat-Math Seminar, Indian Statistical Institute, New Delhi, India. (two talks)
Computer Science Seminar, Indian Institute of Technology- Bombay.
Stat-Math Seminar, Indian Statistical Institute, Kolkata, India.
Mathematics Seminar, Chennai Mathematical Institute, Chennai, India.

Seminar, Department of Mathematics, Indian Institute of Science, Bangalore, India.
School of Technology and Computer Science Seminar, Tata Institute of Fundamental Research, Mumbai, India. (two talks)

2006:

Discrete Mathematics and Theoretical Computer Science Seminar, Department of Computer Science, Yale University.
Statistics Seminar, Department of Mathematics, University of Maryland, College Park.
Student-Faculty Co-sponsored Talk, Department of Statistics, Yale University.

2005:

Statistics Seminar, Department of Statistics, Yale University.
Stochastic Systems Seminar, Division of Applied Mathematics, Brown University.
School of Technology and Computer Science Seminar, Tata Institute of Fundamental Research, Mumbai, India.
Electrical Engineering Seminar, Indian Institute of Technology- Bombay. (two talks)

2002-2004:

Pattern Theory Lunch Seminar, Division of Applied Mathematics, Brown University. (several talks)
Math/Applied Math Graduate Student Seminar, Brown University. (several talks)

STUDENT ADVISING AND UNIVERSITY SERVICE

Student Advising

Ph.D. advising:

Jaeoh Woo, Applied Mathematics Program (

Liyao Wang, Department of Physics (secondary advisor: Professor Nick Read, Physics)

Ankur Sharma, Department of Statistics (co-advised with Professor Joseph Chang, Statistics)

Undergraduate research advising:

Benjamin Mirabelli, mathematics major, reading course with primary focus on independent research, spring 2012

Serving/served on Ph.D. dissertation committees of:

Xiao "Grace" Yang, Statistics (expected completion date: May 2015; advised by Professor Andrew Barron)

Sabyasachi Chatterjee, Statistics (expected completion date: May 2015; advised by Professor Andrew Barron)

Xing "James" Hu, Statistics (completed: May 2010; advised by Professor Harrison Zhou)

John Ferguson, Statistics (completed: May 2009; advised by Professor Joseph Chang)

Steven Jaslar, Applied Mathematics (completed: May 2009; advised by Professors David Pollard and Sekhar Tatikonda)

Cong Huang, Statistics (completed: May 2008; advised by Professor Andrew Barron)

Undergraduate advisor to 2 sophomores and 4 freshmen in 2008-09

University Service

Co-organized the Statistics Seminar at Yale University from Fall 2007 to Fall 2010 (except spring 2009)
Served as FAS Search Committee Diversity Representative on the Junior Faculty Search Committee for the Statistics department for application year 2010
Served on the Ph.D. Admissions Committee for the Statistics department for application years 2008 and 2010, and on the Masters Admissions Committee for application year 2012
Served on the Ph.D. qualifying examination committee in the Department of Statistics for several students between 2006 and 2012
Served on the Ph.D. qualifying examination committee for the Applied Mathematics Program for several students between 2007 and 2012

OTHER PROFESSIONAL ACTIVITIES

Organizational Service

Organizer, Invited Session on "Inequalities in Probability and Statistics", New England Statistics Symposium 2012, Boston, April 21, 2012.
Co-organizer (with A. Orlitsky, A. Wagner, N.P. Santhanam, K. Viswanathan, and B. Szegedy) of the "Workshop on Information Theory and Statistics for Large Alphabets", Banff International Research Station, Canada, October 23–28, 2011.
Organizer, Invited Session on "Information theory and statistics in networks", ITW 2009, Volos, Greece, June 10–12, 2009.
Technical Program Committees of IEEE conferences: ITW 2009, ISIT 2010.

Service as Reviewer

Annals of Probability
Annales de l'Institut Henri Poincaré (B) Probabilités et Statistiques
Bernoulli
IEEE Transactions on Information Theory
Journal of Statistical Planning and Inference
SIAM Journal on Control and Optimization
SIAM Journal on Discrete Mathematics
Random Structures and Algorithms
Journal of Theoretical Probability
Physica D: Nonlinear Phenomena
Advances in Mathematics of Communications
Mathematical Reviews
Statistics and Probability Letters
Operations Research Letters

Electronic Journal of Linear Algebra
EURASIP Journal on Advances in Signal Processing
Entropy
IMA Journal of Mathematical Control and Information
Grant Proposal Review: Indo-US Science and Technology Forum (2008)
Conferences: (ACM) STOC 2011
(IEEE) ITW 2008, 2009, 2010
(IEEE) ISIT 2008, 2009, 2010, 2012

Memberships

American Mathematical Society (AMS)
Institute of Electrical and Electronic Engineers (IEEE)
+ IEEE Information Theory Society
Institute of Mathematical Statistics (IMS)
Applied Probability Society of INFORMS
Society for Industrial and Applied Mathematics (SIAM)
International Association of Mathematical Physics (IAMP)
International Indian Statistical Association (IISA)

Short Research Visits

A one-week visit to the School of Mathematics, Georgia Institute of Technology, Atlanta.
Host: Prof. Prasad Tetali April 2009

A one-week visit to the School of Mathematics, University of Minnesota, Minneapolis.
Host: Prof. Sergey Bobkov March 2009

A two-week visit to the Coordinated Science Laboratories, University of Illinois, Urbana-Champaign.
Host: Prof. Pramod Viswanath March 2009

A 6-day visit to the Indian Statistical Institute, Delhi
Host: Stat-Math Unit January 2009

A one-week visit to the Coordinated Science Laboratories, University of Illinois, Urbana-Champaign.
Host: Prof. Pramod Viswanath March 2008

A 10-day visit to the Institute for Applied Mathematics, University of Bonn
Host: Prof. Dr. Felix Otto July 2007

A one-week visit to the Indian Statistical Institute, Delhi
Host: Stat-Math Unit April 2007

A one-week visit to the Department of Mathematics, Indian Institute of Science, Bangalore
Host: IISc Mathematics Initiative February 2007

A 10-day visit to the Department of Informatics, Athens University of Economics and Business, Greece
Host: Prof. Ioannis Kontoyiannis October 2004

Workshop Participation without giving talks

Workshop on Modern Aspects of Submodularity, Georgia Institute of Technology, Atlanta, GA, March 2012.
IMA Workshop on High Dimensional Phenomena, Minneapolis, MN, September 2011.
International Workshop on Concentration, Functional Inequalities, and Isoperimetry, Boca Raton, Florida, October 2009.
Workshop on Permanents and modeling probability distributions, American Institute of Mathematics, Palo Alto, CA, August 2009.
Applications of Matroid Theory and Combinatorial Optimization to Information and Coding Theory, Banff International Research Station for Mathematical Innovation and Discovery (BIRS), Banff, Canada, August 2009.
Optimal Transportation and Geometry, Program on Ricci curvature and Ricci flow, Centre Emile Borel, Paris, France, May 2008 (organized by the Institut Henri Poincare).
Recent Advances in Probability Conference, Kolkata, India, December 2007 (organized by the Indian Statistical Institute, Kolkata, for its Platinum Jubilee)
Workshop on Algorithmic Convex Geometry, Palo Alto, CA, November 2007 (organized by the American Institute of Mathematics)
Geometrization of Probability Workshop, Ottawa, Canada, September 2007 (organized by the Fields Institute)
MSRI Workshop on Information Theory, Berkeley, CA, 2004 (organized by the Mathematical Sciences Research Institute)

COLLABORATORS

Andrew Barbour, Angewandte Mathematik, Universität Zürich (Zürich, Switzerland)

Andrew Barron, Department of Statistics, Yale University (New Haven, CT)

Sergey Bobkov, School of Mathematics, University of Minnesota (Minneapolis, MN)

Ashwini Deo, Department of Linguistics, Yale University (New Haven, CT)

Farhad Ghassemi, Sloan School of Management, MIT (Cambridge, MA)

Matthew Harrison, Division of Applied Mathematics, Brown University (Providence, RI)

Oliver Johnson, Department of Mathematics, University of Bristol (Bristol, UK)

Abram Kagan, Department of Mathematics, University of Maryland (College Park, MD)

Ioannis Kontoyiannis, Department of Informatics, Athens University of Economics and Business (Athens, Greece)

Adam Marcus, Applied Mathematics Program, Yale University (New Haven, CT)

Prasad Tetali, School of Mathematics and School of Computing, Georgia Institute of Technology (Atlanta, GA) *implying Erdős number = 2*

Tinghui Yu, Mathematical Sciences Department, Binghamton University– State University of New York (Binghamton, NY)

REFERENCES

May be provided on request.