

# Curriculum vitæ of Davar Khoshnevisan

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## Address

- Dept. Mathematics, Univ. of Utah, Salt Lake City, UT 84112-0090
- Fax: (801) 581-4148, Tel.: (801) 581-3896 (office)
- Email: [davar@math.utah.edu](mailto:davar@math.utah.edu)
- URL: [www.math.utah.edu/~davar](http://www.math.utah.edu/~davar)

## Education

- (1989) PhD in Statistics, University of California, Berkeley
- (1984) Combined BSc/MSc in Math. Sciences, The Johns Hopkins University

## Academic Positions

- (2001-present) Professor, University of Utah
- (Jun 2017-Jun 2023) Chair, Department of Mathematics, University of Utah
- (Jan 2016) Visiting Member, Kavli Institute for Theoretical Physics, UCSB
- (Oct 2015) Visiting Member, MSRI, Berkeley
- (Jun 2014) Simons Visiting Professor, MFO, Oberwolfach, Germany
- (Jun 2011) Professeur Invité, University of Lille, France
- (Apr-May 2009) Professeur Invité, University of Paris 13, France
- (Apr-Jun 2001) Professeur Invité, EPF-Lausanne, Switzerland
- (Oct 2000) Professeur Invité, University of Paris 6, France
- (1998) Visiting Member, MSRI, Berkeley (2 weeks)
- (1996-2001) Associate Professor, University of Utah
- (1993-1996) Assistant Professor, University of Utah
- (Summer 1993, Summer 1992) Honorary Fellow, University of Wisconsin-Madison
- (1990-1993) Acting Assistant Professor, University of Washington
- (1989-1990) Instructor, MIT

## Professional Distinctions

- (2021) *Rothschild Distinguished Visiting Fellow*, Newton Institute, Cambridge, UK (postponed to a remote talk in 2022 because of the COVID-19 pandemic)
- (2020) Fellow of *The American Mathematical Society*
- (2018) Medallion Lecturer, *The Institute of Mathematical Statistics*
- (2015) Fellow of *The Institute of Mathematical Statistics*
- (2014) Oberwolfach-Simons Visiting Professorship (with Ana Patrícia Carvalho Gonçalves and Konstantin Khanin)
- (2013) CBMS Lecturer (*Conference Board of Mathematical Sciences*)
- (1998) *The Rollo Davidson Prize* (with Wendelin Werner)

Citations found at <http://www.statslab.cam.ac.uk/Rollo/> and [https://en.wikipedia.org/wiki/Rollo\\_Davidson\\_Prize](https://en.wikipedia.org/wiki/Rollo_Davidson_Prize)

### Select Invited Presentations (2022+ only)

- (Oct 2024) *Stochastic Partial Differential Equations*, Brin Mathematics Research Center, University of Maryland
  - (Aug 2024) *Summer School on PDEs and Randomness* (4 lectures), Brin Mathematics Research Center, University of Maryland
  - (May 2024) *Barrett Lectures* (plenary), University of Tennessee, Knoxville
  - (Apr 2024) Colloquium, University of Maryland, College Park
  - (Feb 2024) *Stochastic Partial Differential Equations*, Erwin Schrödinger Institute, Vienna, Austria (unable to attend due to scheduling conflicts)
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- (Dec 2023) Barcelona Probability Seminar, *Centre de Recerca Matemàtica-Barcelona*, Barcelona, Spain (unable to attend due to health reasons)
  - (Nov/Dec 2023) Workshop on *Kinetic Theory, Thermodynamics, and Contact Geometry*, POSTECH, Pohang, South Korea
  - (Nov 2023) Probability Seminar, University of Washington, Seattle
  - (Aug 2023) *2023 Conference on Stochastic Analysis and Random Fields*, Michigan State University (2 Tutorial Lectures)
  - (June 2023) *International Conference on Malliavin Calculus and Related Topics: A Celebration of David Nualart and Anton Thalmaier*, University of Luxembourg, Luxembourg
  - (June 2023) *Random Growth Models* (in honor of Timo Seppäläinen), Banff International Research Station (unable to attend due to scheduling conflicts)
  - (May 2023) *New Trends in Stochastic Analysis*, BIRS-CMO, Oaxaca, México (Attend remotely)
  - (Mar 2023) *Stochastic Processes and Related Topics*, AMS Spring 2023 Sectional Meeting, Georgia Institute of Technology, Atlanta, GA (unable to attend due to scheduling conflicts)
  - (Apr 2023) *Fingerlakes Probability Seminar*, SUNY Binghamton, NY
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- (Nov 2022) *Northeast Probability Seminar*, Columbia University
  - (Oct 2022) *Asymptotic Problems in Probability and PDE: A Conference in Honor of Mark Freidlin*, Brin Mathematics Research Center, University of Maryland
  - (Oct 2022) PV Seminar, Victoria, Australia (remote seminar)
  - (Sep 2022) *Theory and Computational Methods for SPDEs*, BIRS-CMO, Oaxaca, México (online conference)
  - (Sep 2022) *Stochastic Analysis and Applications*, AMS Fall Central Sectional Meeting, The University of Texas, El Paso (unable to attend due to scheduling conflicts)
  - (Jun 2022) *Regularization by Noise*, Section in 2022 IMS Annual Meeting in Probability and Statistics, London, UK (unable to attend due to scheduling conflicts)
  - (Jun 2022) *Scale Invariance and Randomness*, Lille, France (unable to attend due to scheduling conflicts)
  - (Mar 2022) AMS Conference in Purdue University, Special Session on *Gaussian and non-Gaussian Stochastic Analysis*, West Lafayette, Indiana
  - (Feb 2022) Colloquium, New Mexico State University (remote)
  - (Feb 2022) *Stochastic Partial Differential Equations*, Erwin Schrödinger Institut, Vienna,

Austria (cancelled due to COVID-19)

- (Feb 2022) *Fractional Differential Equations*, Newton Institute, Cambridge, UK (online talk)

### Editorial Service (2019+ only)

- *Books & Book Series*
  - (Sep 2013-now) *Lecture Notes in Mathematics*, Springer-Berlin  
Member of the Advisory Board
  - (Feb 2012-now) *Probability & Its Applications*, Springer-Basel  
Series Editor (with S. Dereich, A. Kyprianou, & S. Resnick)
  - (Feb 2012-now) *Progress in Probability*, Springer-Basel  
Series Editor (with A. Kyprianou & S. Resnick)
- *Research Journals*
  - (2023-2025) *Stochastics & Partial Differential Equations*, Guest editor for special volumes in honor of Giuseppe da Prato.
  - (May 2024-now) *Stochastics & Partial Differential Equations*, AE
  - (Jan 2024-2027) *Electr. J. of Probability* and *Electr. Comm. in Probability*, AE
  - (Feb 2023-Jan 2026) *Transactions of the AMS*, Coordinating Editor of section on Analysis, Dynamics, Probability & Combinatorics
  - (Jan 2022-Dec 2024) *Bernoulli*, AE
  - (Feb 2020-Jan 2027) *Transactions and Memoirs of the AMS*, Probability & Stochastic Analysis Editor
  - (Feb 2013-now) *J. Fractal Geometry*, AE
  - (May 2007-now) *J. Theoretical Probability*, AE

### Grants (2019+ only)

- (2023-2026) NSF individual research grant
- (1997-2023) NSF individual research grant (co-PI: Yimin Xiao)
- (2019) NSF-funded conference, *Seminar on Stochastic Processes*

### Professional Service (2019+ only)

- (Sept 2021-Aug 2024) Member of the IMS Council, Institute of Mathematical Statistics
- (Sep 2018-Sep 2024) Member of the advisory committee of the Department of Applied Mathematics and Statistics, The Johns Hopkins University
- (April-May 2022) External reviewer for the Department of Mathematics at Case Western Reserve University
- (Feb 2021-May 2021) Nominator for the *Fudan-Zhongzhi Science Award*
- (May 2020-Jul 2020) Nominator for the *MacArthur Foundation*
- (Jan 2018-Jan 2020) Member of the advisory committee of The University of Utah's *Continuing Education and Community Engagement*
- (Aug 2017-Aug 2020) Institute of Mathematical Statistics, member of the Committee on Fellows
- (Apr 2017-Aug 2020) Institute of Mathematical Statistics/Bernoulli Society, member of the joint Special Lectures Committee
- (2019) Member of the search committee for the director of the Scientific Computing Institute, The University of Utah

- (Nov 2019) Internal reviewer for the Department of English, University of Utah
- (Mar 2017-2021) Foreign member of the Scientific Advisory Committee of *Summer School in Stochastic Analysis*, Centre de Recerca Matemàtica-Barcelona, Barcelona, Spain
- (2016-now, except 2022-24) Member of the NSF Graduate Research Fellowship Panel
- (Jan 2024; Dec 2019; Feb 2017; Jan 2012; Jan 2011; Jan 2009; Dec 2007; Dec 2001) Member of the NSF Panel for the Probability Grants Section

### Conference Organization (2019+ only)

- (Aug 2025-Dec 2025) An organizer of the semester-long program “Recent Trends in Stochastic Partial Differential Equations” at Simon-Leffler Math Institute (SL-Math, formerly MSRI), Berkeley, CA
- (Aug 2024) An organizer for the workshop *Stochastic PDEs in Seoul 2024*, Korean Institute for Advanced Studies (KIAS), South Korea
- (Aug 2023) Member of the Scientific Committee for *Frontiers in Stochastic Analysis* at UIC
- (July 2021) Member of the scientific committee for conference *Random Excursions with Jean Bertoin* (<http://jb60.math.cnrs.fr>), Paris, France
- (Aug 2020-May 2021) Organizer of biweekly seminar, *Stochastic Analysis Under COVID - Years 2020-2021* (<https://saucy20.weebly.com>; co-organizers: Samy Tindel and Jing Wang)
- (May-June 2022) Co-organizer of *Stochastic Analysis and Stochastic Partial Differential Equations: A Celebration of Marta Sanz-Solé’s Mathematical Legacy*, CRM-Barcelona and Universitat de Barcelona, member of the organizing and scientific committee
- (May 2021, Apr 2018, Apr 2016, May 2014) Co-organizer of *Frontier Probability Days*, member of the long-term organizing committee
- (Mar 2014-Mar 2023) *Seminar on Stochastic Processes*, member of the long-term organizing committee

### Research Students (2006+ only)

- *PhD*
  - Mr. Sudheesh Surrendranath (current)
  - Dr. Conor Tillinghast (PhD 2021, Utah) Data Scientist at *Recursion*
  - Dr. Weicong Su (PhD 2019, Utah) Senior Data Scientist at *Bayer Crop Science*
  - Dr. Shiu-Tang Li (PhD 2017, Utah) Software Engineer for *Google*
  - Dr. Pavel Bézdek (PhD 2016, Utah) VP of Risk Modeling for *Citi*
  - Dr. Liang Zhang (PhD 2012, Utah) Software Engineer for *TikTok*
  - Dr. Pejman Mahboubi (PhD 2012, UCLA) VP Data Science at *JP Morgan Chase & Co.*
  - Prof. Karim Khader (MStat 2008; PhD 2009, Utah) Research Associate Prof., *Univ. of Utah*, Department of Internal Medicine
  - Prof. Shang-Yuan Shiu (PhD 2010, Utah) *National Central University*, Department of Mathematics, Taiwan
  - Dr. Michael Purcell (MStat 2009; PhD 2009, Utah) Senior Research Engineer, *Australian National University*, Canberra, Australia
- *MStat* [a partial list]
  - Mr. Premkumar Narayanan (2018), Principal Software Engineer for *Salt Lake County*,

- Mr. Nicholas Stephenson (2018), now Data Scientist at *Utah Dept of Health & Human Services*
- Ms. Katie Dodds (2016), now Sr. Director at *Extra Space Storage*
- Ms. Yi Zhao (2015)
- Mr. Benjamin Aldous (2014) now Sr. Analyst at *Western Electricity Coord. Council*
- Mr. Zhi Wang (2014)
- Ms. Jin Dai (2006)
- Ms. Trang Le (2006)
- *BSc* [a partial list]
  - Mr. Winston Stucki (2019, 2020, 2021), now PhD student at *Georgia Tech*, Department of Mathematics
  - Ms. Jane Moffatt (NSF REU 2018), now Data Scientist at *Mercury*
  - Ms. Wantong Du (NSF REU 2013-2015)
  - Ms. Breanne Chryst (NSF REU 2011-2012) Principal Data Scientist at *Cambridge Assessment* (PhD at Yale Statistics)
  - Mr. Chris Robison (NSF REU 2010-2011) finished an MS in Mathematics and an MS in Computer Science at U of Utah
  - Dr. David LeDuc Valken Tucker (NSF REU 2010-2011) currently Marketing Analyst at *Backcountry.com* (PhD at Harvard Biostatistics)
  - Mr. Xiaokan Tong (NSF REU 2009-2010)
  - Mr. Parker Childs (NSF REU 2007) now bio-Mathematician at BioFire Diagnostics
  - Ms. Zsuzsanna Horváth (NSF REU 2006)
  - Mr. Benjamin Richards (NSF REU 2006)
  - Prof. David Seal (NSF REU/honor's thesis 2006) US Naval Academy (Mathematics)
  - Dr. E. McKay Hyde (Honor's thesis 2003) managing director of Market Risk Technology at the Goldman-Sachs Group, Inc.

### **Post-Doctoral and Visiting Scholars (current and former)**

- Prof. Le Chen (2014-2015, Utah; now at Auburn U.)
- Prof. Daniel Conus (2009-2011, Utah; now at Lehigh U.)
- Prof. Xia Chen (1999-2000, Utah; now at U. Tennessee)
- Prof. Mohammud Foondun (2006-2009, Utah; now at Strathclyde U., UK)
- Prof. Nicos Georgiou (2011-2013, Utah, with F. Rassoula-Agha; now at U. Sussex, UK)
- Prof. Jingyu Huang (2015-2018, Utah; now at U. Birmingham, UK)
- Prof. Mathew Joseph (2009-2012, Utah, with F. Rassoul-Agha; now at ISI-Bangalore)
- Prof. Kunwoo Kim (2012-2015, Utah; now at POSTECH, Korea)
- Prof. Arjun Krishnan (2015-2017, Utah, with T. Alberts, J. Chaika, and F. Rassoul-Agha; now at U. Rochester)
- Prof. David Levin (2002-2005, Utah; now at U. Oregon)
- Prof. Pedro Méndez (2001-2004, Utah; now at U. Costa Rica)
- Prof. Fei Pu (2019-2022, Utah; now at Beijing Normal U., China)
- Prof. Alex Ramos (2014-2015, Utah; now at U. Pernambuco, Brazil)
- Foundation Prof. Yimin Xiao (1996-1999, Utah, now at Michigan State U.)

## Select Publications

- *Books*:
  - *Calculus In Gauss Space: An Introduction to Gaussian Analysis* (in preparation; with Tom Alberts)
  - *From Lévy-type Processes to Parabolic SPDEs*, Advanced Courses in CRM-Barcelona, CRM-Birkhäuser, Basel, 2017 (with René Schilling. Editors: Frederic Utzet and Lluís Quer-Sardanyons)
  - *Analysis of Stochastic Partial Differential Equations*, CBMS Regional Conference Series in Mathematics **119**, American Mathematical Society, Providence, RI, 2014
  - *A Minicourse on Stochastic Partial Differential Equations*, Springer-Verlag, Berlin, 2008 (Editor and chapter author; coeditor: Firas Rassoul-Agha; other chapter authors: Robert Dalang; Carl Mueller; David Nualart; and Yimin Xiao)
  - *Probability*, American Mathematical Society, Graduate Textbooks in Mathematics, Providence, Rhode Island, 2007
  - *Multiparameter Processes: An Introduction to Random Fields* Springer-New York, NY, 2002
- *Preprints and manuscripts accepted and/or in press* (copies available at <http://www.math.utah.edu/~davar> and <http://www.math.utah.edu/~davar/publications.html>):
  - Instantaneous everywhere blowup of parabolic SPDEs (19 pages; submitted; with Mohammed Foondun and Eulalia Nualart)
  - On the valleys of the stochastic heat equation (22 pages; *Annals of Applied Probability*; with Kunwoo Kim and Carl Mueller)
  - Dissipation in Parabolic SPDEs II: Oscillation and decay of the solution (36 pages; *Annales de l'Institut Henri Poincaré* ; with Kunwoo Kim and Carl Mueller)
- *Published manuscripts* (2017+ only):
  - Optimal regularity of SPDEs with additive noise *Electr. J. Probab.* **28** article no. 142 (2023) pp. 1-31 (with Marta Sanz-Solé)
  - Phase analysis of a family of stochastic reaction-diffusion equations *Electr. J. Probab.* **28** article no. 101 (2023) pp. 1-66 (with Kunwoo Kim, Carl Mueller, and Shang-Yuan Shiu)
  - Central limit theorems for spatial averages of the stochastic heat equation via Malliavin-Stein's method *Stochastics and Partial Differential Equations: Analysis and Computations* 11(1) (2023) 122-176 (with Le Chen, David Nualart, and Fei Pu)

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  - Spatial ergodicity and central limit theorems for parabolic Anderson model with delta initial condition, *Journal of Functional Analysis* (2022) **282**(2) 109290 (27 pages; with Le Chen, David Nualart, and Fei Pu)
  - Central limit theorems for parabolic stochastic partial differential equations, *Annales de l'Institut Henri Poincaré* (2022) **58**(2) 1053-1077 (with Le Chen, David Nualart, and Fei Pu)

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  - Spatial stationarity, ergodicity and CLT for parabolic Anderson model with delta initial condition in dimension  $d \geq 1$ , *SIAM Journal of Mathematical Analysis* (2021) **53**(2)



- 2084-2133 (with David Nualart and Fei Pu)
- Spatial ergodicity for SPDEs via Poincaré-type inequalities, *Electronic Journal of Probability* (2021) **26** paper no. 140, 1-37 (with Le Chen, David Nualart, and Fei Pu)
  - A CLT for dependent random variables, with an application to an infinite system of interacting diffusion processes, *Proceedings of the American Mathematical Society* **149**(12) (2021) 5367-5384 (with Le Chen, David Nualart, and Fei Pu)
- 
- Analysis of a stratified Kraichnan model, *Electronic Journal of Probability* (2020) **25** Article No. 122, 67 pp. (with Jingyu Huang)
  - Dissipation in parabolic SPDEs, *Journal of Statistical Physics* (2020) **179** 502-534 (with Kunwoo Kim, Carl Mueller, and Shang-Yuan Shiu)
- 
- Dense blowup for parabolic SPDEs, *Electronic Journal of Probability* (2019) **24** Paper No. 118, 33 pp. (with Le Chen, Jingyu Huang, and Kunwoo Kim)
  - Talagrand concentration inequalities for stochastic partial differential equations, *Stochastic and Partial Differential Equations: Analysis & Computation* (2019) **7**(4) 679-698. (with Andrey Sarantsev)
  - Global solutions to reaction-diffusion equations with super-linear drift and multiplicative noise, *Annals of Probability* (2019) **47**(1) 519-559. (with Robert C. Dalang and Tusheng Zhang)
- 
- The dimension of the range of a random walk, *Electronic Journal of Probability* (2018) **23**(83) 1-31 (with Nicos Georgiou, Kunwoo Kim, and Alex D. Ramos)
  - A macroscopic multifractal analysis of parabolic stochastic PDEs, *Communications in Mathematical Physics* (2018) **360** 307-346 (with Kunwoo Kim and Yimin Xiao)
- 
- A conversation with Mu-Fa Chen, *Notices of the American Mathematical Society* (2017) **64**(6) 616-619 (with Edward Waymire)
  - On the multifractal local behavior of parabolic stochastic PDEs, *Electronic Communications in Probability* (2017) **49** 11 pp. (with Jingyu Huang)
  - Intermittency and multifractality: A case study via stochastic PDEs, *Annals of Probability* (2017) **45**(6A) 3697-3751 (with Kunwoo Kim and Yimin Xiao)
  - On the macroscopic fractal geometry of some random sets, In: *Stochastic Analysis and Related Topics*, 179-206, *Progress in Probability* **72**, Birkhäuser/Springer, Cham, 2017 (with Yimin Xiao)
  - A boundedness trichotomy for the stochastic heat equation, *Annales de l'Institut Henri Poincaré* (2017) **53**(4) 1991-2004 (with Kunwoo Kim and Le Chen)
  - Strong invariance and noise comparison principles for some parabolic SPDEs, *Annals of Probability* (2017) **45**(1) 1-27 (with Mathew Joseph and Carl Mueller)
  - Dissipation and high disorder, *Annals of Probability* (2017) **45**(1) 82-99 (with Le Chen, Michael Cranston, and Kunwoo Kim)