

Curriculum vitae: Daniel Jerison

Department of Mathematical Sciences
Tel Aviv University
Tel Aviv 69978
Israel

jerison@mail.tau.ac.il, dcjerison@gmail.com
<http://www.math.tau.ac.il/~jerison/>
US Citizen

Research interests

Discrete probability: discrete complex analysis and circle packing; abelian sandpile and rotor-router models; convergence rates and mixing times of Markov chains; Markov chain Monte Carlo estimation

Employment

2017–2020: Postdoctoral Fellow, Department of Mathematical Sciences, Tel Aviv University

2016–2017: Visiting Assistant Professor, Department of Mathematics, Cornell University

2014–2016: Lecturer, Department of Mathematics, Cornell University

Education

2016: Ph.D. in mathematics, Stanford University. Advisor: Persi Diaconis. Thesis title: The drift and minorization method for reversible Markov chains

2007: B.A. in mathematics (*cum laude*, high honors in field), Harvard University. Undergraduate thesis advisor: Horng-Tzer Yau

Ph.D. thesis and papers

D.C. Jerison. “The drift and minorization method for reversible Markov chains.” PhD thesis. Stanford University, 2016. URL: <http://www.math.cornell.edu/~jerison/papers/thesis.pdf>.

D.C. Jerison. “Quantitative convergence rates for reversible Markov chains via strong random times.” *ArXiv e-prints* (Aug. 2019). arXiv: [1908.06459](https://arxiv.org/abs/1908.06459) [[math.PR](#)].

O. Gurel-Gurevich, D.C. Jerison, and A. Nachmias. “The Dirichlet problem for orthodiagonal maps.” *ArXiv e-prints* (Jun. 2019). arXiv: [1906.01613](https://arxiv.org/abs/1906.01613) [[math.PR](#)].

O. Gurel-Gurevich, D.C. Jerison, and A. Nachmias. “A combinatorial criterion for macroscopic circles in planar triangulations.” *ArXiv e-prints* (Jun. 2019). arXiv: [1906.01612](https://arxiv.org/abs/1906.01612) [[math.PR](#)].

R.D. Hough, D.C. Jerison, and L. Levine. “Sandpiles on the square lattice.” *Commun. Math. Phys.* 367, no. 1 (2019): 33–87. arXiv: [1703.00827](https://arxiv.org/abs/1703.00827) [[math.PR](#)].

D.C. Jerison, L. Levine, and J. Pike. “Mixing time and eigenvalues of the abelian sandpile Markov chain.” Accepted in *Trans. Amer. Math. Soc.* arXiv: [1511.00666 \[math.PR\]](#).

D.C. Jerison. “General mixing time bounds for finite Markov chains via the absolute spectral gap.” *ArXiv e-prints* (Oct. 2013). arXiv: [1310.8021 \[math.PR\]](#).

Awards

2017–2019: Zuckerman Postdoctoral Scholarship

2013: Centennial Teaching Assistant Award, Stanford University

Invited talks

June 2018: IMS Asia Pacific Rim Meeting: Invited Paper Session on Markov Chains and Related Topics

May 2018: Hebrew University of Jerusalem Combinatorics Seminar

January 2018: Technion – Israel Institute of Technology Probability Seminar

October 2017: Tel Aviv University Horowitz Seminar

July 2017: PROMYS Guest Lecture

February 2017: University of Rochester Probability Seminar

June 2016: Microsoft Research

May 2016: Statistical Society of Canada 2016 Annual Meeting: Invited Paper Session on Adaption and Approximation in Markov Chain Monte Carlo

April 2016: Penn-Temple Probability Seminar

April 2015: Duke Probability Seminar

November 2014: Cornell Probability Seminar

March 2014: Stanford Probability Seminar

Teaching

Research Lab Director, Program in Mathematics for Young Scientists (PROMYS), Boston University (supervising research groups of high school students)

Summer 2017

Visiting Assistant Professor (previously Lecturer), Cornell University

Fall 2016: Math 6710, Probability I (graduate-level course)

Fall 2016: Math 1105, Finite Mathematics for the Life and Social Sciences (course head)

Summer 2016: Math 2940, Linear Algebra for Engineers

Spring 2016: Math 4740, Stochastic Processes

Fall 2015: Math 4220, Applied Complex Analysis

Spring 2015: Math 3040, Prove It! (introduction to mathematical proof)

Fall 2014: Math 2210, Linear Algebra

Teaching Assistant, Stanford University (leading sections, holding office hours, grading exams)

Spring 2014: Math 21, Single-variable Calculus (third of a 3-quarter sequence)

Winter 2014: Math 51A, Linear Algebra and Multivariable Differential Calculus

Autumn 2013: Math 42A, Single-variable Calculus (second of a 2-quarter sequence)

Spring 2013: Math 21

Winter 2013: Math 51 (same as 51A)

Autumn 2012: Math 41A, Single-variable Calculus (first of a 2-quarter sequence)

Autumn 2011: Math 42A

Autumn 2010: Math 53, Ordinary Differential Equations

Winter 2010: Math 42 (same as 42A)

Administrative Teaching Assistant, Stanford University (scheduling, coordinating, managing communication between instructors and students)

Spring 2012: Math 51

Course Assistant, Stanford University (holding office hours and review sessions, grading exams or homework)

Spring 2011: Math 115, Elementary Real Analysis

Autumn 2009: Math 52, Multivariable Integral Calculus

Autumn 2007: Math 155, Analytic Number Theory

Grader, Massachusetts Institute of Technology (grading homework, holding review sessions)

Spring 2009: 18.445, Introduction to Stochastic Processes

Teaching Assistant, Stanford University Mathematics Camp (SUMaC) (working one-on-one with students, running research groups)

Summer 2012: Program I, number theory and group theory

Summer 2011*: Program II, algebraic topology

Summer 2009–2010*: Program I

* During these summers I lived with the students as a residential TA.

Counselor, PROMYS, Boston University (living and working one-on-one with students, running research groups)

Summer 2005–2007

Service

2019: Member, PROMYS admissions committee (making final admissions decisions)

2018–2019: Pre-reader, *Planar maps, random walks and circle packing (St. Flour summer school lecture notes)* by A. Nachmias (making editing suggestions and corrections)

2017: Pre-reader, *Markov chains and mixing times, 2nd edition* by D. Levin and Y. Peres (making editing suggestions and corrections)

2016–2017: Co-organizer, Cornell Probability Seminar

2016: Speaker, Math 5080 Workshop (outreach for high school math teachers), spoke about Bayes' theorem

2012–2014: TA Mentor, Stanford mathematics department (advising new TAs, doing classroom observations)

2011–2012: Organizer, Student Probability and Related Fields Seminar, Stanford mathematics department

Journal referee for *Annales de l'Institut Henri Poincaré, Probabilités et Statistiques*; *Annals of Applied Probability*; *Random Structures and Algorithms*; *Electronic Journal of Statistics*; *Discrete Mathematics*; *Methodology and Computing in Applied Probability*