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Education

May 2015	Ph.D. Mathematics, U.C. Berkeley. Advisor: Bernd Sturmfels.
May 2011	M.A. Mathematics, University of Pennsylvania.
December 2010	B.A. Mathematics, *summa cum laude*, University of Pennsylvania. Minor in Near-Eastern Languages and Civilizations.

Employment

Visiting Researcher, Department of Mathematics
The Pennsylvania State University. June - December 2015
Mentor: Vladimir Itzkov.

Simons Postdoctoral Fellow, Depts of Mathematics & Biology
University of Pennsylvania. January 2016 - Present
Mentor: Yun S. Song.

Teaching Experience

Graduate Student Instructor, University of California, Berkeley.
Six weekly hours of instruction, one weekly office hour, and proctoring and grading exams.

Fall 2011	Math 1B: Calculus 2	Instructor: Per-Olof Persson
Spring 2012	Math 1B: Calculus 2	Instructor: Slobodan Simic
Spring 2014	Math 10B: Math for Life Sciences	Instructor: Per-Olof Persson

Professor, University of Pennsylvania.

Fall 2016	Math 320: Computer Methods in Mathematics. Theoretical and computational aspects of numerical quadrature, equation-solving, linear algebra and differential equations.

Research Products

Refereed Publications:

1. Curto, C., Gross, E., Jeffries, J., Morrison, K., Omar, M., Rosen, Z., Shiu, A., & Youngs, N. (2016) *What makes a neural code convex?* To appear in the SIAM Journal on Applied Algebra and Geometry.
2. Kahle, T., Kubjas, K., Kummer, M., & Rosen Z. (2016) *The geometry of rank-one tensor completion.* SIAM Journal on Applied Algebra and Geometry, 1(1), 200-221, 2017.
3. Kubjas, K. & Rosen, Z. (2016) *Matrix Completion for the Independence Model.* Journal of Algebraic Statistics, 8(1), 1-21, 2017.
4. Gross, E., Harrington, H.A., Rosen, Z., & Sturmfels, B. (2016). *Algebraic Systems Biology: A Case Study for the Wnt Pathway.* Bulletin of Mathematical Biology, 78, 21-51.

5. MacLean, A. L., Rosen, Z., Byrne, H. M., & Harrington, H. A. (2015). *Parameter-free methods distinguish Wnt pathway models and guide design of experiments.* Proceedings of the National Academy of Sciences, 112(9), 2652-2657

Non-refereed Publications:

1. Burnham, G., Rosen, Z., Sidman, J., & Vermeire, P. (2015). *Line arrangements modeling curves of high degree: Equations, syzygies, and secants.* Recent Advances in Algebraic Geometry: A Volume in Honor of Rob Lazarsfeld's 60th Birthday, 417, 52.

Submitted for Review:

1. *Convex Neural Codes in Dimension 1*. (with Yan X. Zhang). arXiv:1609.07985.
2. *Algebraic Tools for the Analysis of State Space Models*. (with Nicolette Meshkat and Seth Sullivant). arXiv:1609.07985.
3. *Algebraic Matroids with Graph Symmetry.* (with Franz Király and Louis Theran). arXiv:1312.3777.
4. *Computing Algebraic Matroids.* arXiv:1403.8148.

Expository Work:

1. *Graded Betti Numbers of Graph Curves. Master's Thesis at Penn*. Defended May 2011.
2. *Graph Curves.* Expository article for Bernd Sturmfels' course in Algebraic Curves. Accessible at: `http://math.berkeley.edu/~zhrosen/graphcurves.pdf`

Invited Lectures

November 10, 2016	Song Group Seminar, University of Pennsylvania.
September 20, 2016	Symbolic Computation Seminar, North Carolina State University.
May 18, 2016	Song Group Seminar, University of Pennsylvania.
November 9, 2015	Large Geometric Structures & Big Data Seminar, Aalto University, Helsinki, Finland.
October 14, 2015	MASS Applied Algebraic Geometry Seminar, Penn State University.
October 4, 2015	AMS Sectional Meeting, Loyola University, Chicago.
April 20, 2015	SIAM Chapter Meeting, UC Berkeley.
April 8, 2015	Applied Algebra and Network Theory Seminar, Penn State University.
March 31, 2015	Symbolic Computation Seminar, North Carolina State University.
March 30, 2015	Statistics Seminar, University of Kentucky.
December 1, 2014	Computational Algebraic Geometry Seminar, UC Berkeley.
November 24, 2014	Student Combinatorics Seminar, UC Berkeley.
November 7, 2014	Lightning Talks, Industry Day, Simons Institute of Computing.
October 26, 2014	AMS Fall Sectional Meeting, Combinatorial Commutative Algebra Session, San Francisco State University.
October 23, 2014	Prof. J.M. Landsberg's group, Simons Institute of Computing.
October 22, 2014	Combinatorics Seminar, San Francisco State University.
December 23, 2013	Seminar on Algebraic Combinatorics, Ben-Gurion University of the Negev, Beer Sheva, Israel.
October 7, 2013	Computational Algebraic Geometry Seminar, Max-Planck Institute for Mathematics.
June 13, 2013	Diskrete Geometrie Seminar. Freie Universität Berlin.
June 4, 2013	(Poster Presentation) MEGA 2013. Goethe Universität, Frankfurt am Main, Germany
May 3, 2013	Macdonald Polynomials Seminar, UC Berkeley.
April 5, 2013	Valley Geometry Seminar, UMASS Amherst.

November 2012	Bernd Sturmfels' course in Combinatorial Commutative Algebra, UC Berkeley.
June 2012	ECCO'12: Encuentro Colombiano de Combinatoria, Universidad de Los Andes, Bogotá.
December 2011	Bernd Sturmfels' course in Algebraic Curves, UC Berkeley.

Other Workshops & Conferences Attended

July 2014	IMA Modern Applications of Representation Theory, University of Chicago.
June 2014	AMS Math Research Communities: Algebraic and Geometric Methods in Applied Discrete Mathematics. Snowbird, UT.
May 2014	Algebraic Statistics 2014. Illinois Institute of Technology, Chicago, IL.
June 2013	Summer School in Algebraic Statistics, Nordfjordeid, Norway.

Synergistic Activities

1. *Conference Organizer*. Organized, jointly with Yun S. Song and Khanh Duo Doc, a conference at the University of Pennsylvania titled "Penn Symposium on Mathematical & Computational Biology," on May 23-24, 2016.

2. *Seminar Organizer*. Organized, jointly with Bernd Sturmfels, a seminar on "Computational Algebraic Geometry" in the Berkeley Math Department in Fall 2014.

3. *Code for Matroid Computation*. Wrote code for Macaulay2 and Bertini to compute algebraic matroids. Also wrote code in Sage for a matroid application in statistics. All code is available on my website.

4. *Distributing Notes*. Typed and illustrated notes for various Berkeley classes and the ECCO'12 conference, available on my website.

5. *Grant Writing*. Helped Heather Harrington and Bernd Sturmfels to write the grant Royal Society International Exchanges Scheme 2014/R1 IE140219, which allowed me to visit Prof. Harrington at Oxford University from August 13 - 18, 2014.