

ELINA ROBEVA

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| Positions | University of British Columbia, <i>Assistant Professor</i> Department of Mathematics | Vancouver, BC July 2019 - present |
| | Massachusetts Institute of Technology, <i>Statistics Instructor and NSF Postdoctoral Fellow</i> Department of Mathematics | Cambridge, MA Sept 2016 - Jun 2019 |
| Education | University of California at Berkeley, <i>Mathematics Ph.D.</i> Advisor: Bernd Sturmfels | Berkeley, CA Sept 2012 - May 2016 |
| | Harvard University, <i>Master of Arts in Mathematics</i> | Cambridge, MA Sept 2011 - June 2012 GPA 4.00 |
| | Stanford University, <i>B.S in Mathematics with Honors and Distinctions; Minor: Computer Science</i> | Stanford, CA Sept 2007 – June 2011 GPA 4.00 |
| | Sofia High School of Mathematics, <i>Graduated with recognition for outstanding achievements in the area of mathematics</i> <i>National diploma for outstanding achievements from the Minister of Education of Bulgaria</i> | Sofia, Bulgaria June 2007 GPA 6.00/6.00 |
| Awards & Honors | Canada CIFAR AI Chair 2024 – 2029 | Vancouver, BC |
| | AMII Fellow 2024 | Edmonton, AB |
| | André-Aisenstadt Prize 2023 | Montreal, QC |
| | CAIMS/PIMS Early Career Research Award 2022 | Kelowna, BC |
| | UBC/PIMS Mathematical Sciences Young Faculty Award 2020 | Vancouver, BC |
| | SIAM Algebraic Geometry Early Career Prize 2019 | Bern, Switzerland |
| | Bernard Friedman Memorial Prize in Applied Mathematics (thesis award) 2016 | Berkeley, CA |
| | Outstanding Graduate Student Instructor Award (teaching award) 2016 | Berkeley, CA |
| | MIT Rising Stars workshop participant 2015 | Cambridge, MA |
| | Berkeley Fellowship for outstanding doctoral applicants 2012 | Berkeley, CA |
| | Pierce Fellowship for incoming Harvard graduate students 2011 | Cambridge, MA |
| | Honorable Mention for the Morgan Prize for Outstanding Research in Mathematics 2011 | Stanford, CA |
| | Undergraduate Research Award in Mathematics 2011 | Stanford, CA |
| | Dean’s Award for Academic Accomplishment 2011 | Stanford, CA |
| | J.E.Wallace Sterling Award for Scholastic Achievement 2011 | Stanford, CA |
| Honorable Mention – top 75 in the Putnam Mathematical Competition 2010 | Stanford, CA | |
| Highbridge Award for Mathematical Problem Solving 2008, 2009 | Stanford, CA | |
| Silver Medal – International Mathematical Olympiad 2007 | Hanoi, Vietnam | |
| Silver Medal – International Mathematical Olympiad 2006 | Ljubljana, Slovenia | |
| Gold Medal – Balkan Mathematical Olympiad 2007 | Rhodes, Greece | |
| Gold Medal – 2 nd Young International Mathematical Convention 2006 | Lucknow, India | |
| Research Interests | I develop machine learning and optimization methods for inference in models that depict complex dependencies in data. I address situations in which many commonly made yet unrealistic assumptions do not hold by leveraging the mathematical structure of the model at hand. I use pure mathematical tools such as algebra, geometry, and combinatorics, which often depict the structure of the models at hand. More precisely, I study <ul style="list-style-type: none">❖ causal inference algorithms for observational data (both temporal and non-temporal) in the presence of hidden variables and causal feedback loops (12, 16, 20, 22, 27, 28, 32);❖ tensor decomposition applied to machine learning problems (6, 7, 8, 9, 14, 21, 24, 26);❖ sparse inverse problems, such as super-resolution imaging (10, 29);❖ high-dimensional, non-parametric density estimation that leverages dependencies between the variables (15, 17, 18, 19, 23, 25, 30, 31). | |
| Preprints | 33. Causal Discovery for Linear Non-Gaussian Causal Models with Unobserved Confounding , with Daniela Schkoda and Mathias Drton, <i>arXiv:2408.04907</i> | |
| | 32. Causal Inference in Directed, Possibly Cyclic, Graphical Models , with Pardis Semnani, <i>arXiv:2305.06127</i> | |
| | 31. Log-concave Density Estimation with Orthogonal Independent Components , with Sharvaj Kubal and Christian Campbell, <i>arXiv:2401.01500</i> | |

30. Log-concave Density Estimation in Undirected Graphical Models, with Kaie Kubjas, Olga Kuznetsova, Pardis Semnani, and Luca Sodomaco, *arXiv:2206.05227*

Publications

29. Multivariate Super-Resolution without Separation, with Bakytzhan Kurmanbek, *Information and Inference*, 2023

28. Ultra-marginal Feature Importance: Learning from Data with Causal Guarantees, with Joe Janssen and Vincent Guan, *AISTATS* 2023

27. Third-order Moment Varieties for Non-Gaussian Graphical Models, with Carlos Améndola, Mathias Drton, Alex Grosdos, and Roser Homs, *Information and Inference*, 2023

26. Robust Eigenvectors of Symmetric Tensors, with Tommi Muller and Konstantin Usevich, *SIAM Journal of Matrix Analysis and Applications*, 2022

25. Kernel Density Estimation for Totally Positive Random Vectors, with Ali Zartash, *Algebraic Statistics*, 2022

24. The Set of Orthogonal Tensor Trains, with Pardis Semnani, *Vietnam Journal of Mathematics, Special Issue in Honor of Bernd Sturmfels' 60th Birthday*, 2022

23. Bimonotone Subdivisions of Point Configurations in the Plane, with Melinda Sun, *Algebraic Statistics*, 12:2 (2021) pp.125-138

22. Learning Linear Non-Gaussian Graphical Models with Multidirected Edges, with Yiheng Liu and Huanqing Wang, *Journal of Causal Inference*, 9:1 (2021) pp. 250-263

21. Orthogonal Decomposition of Tensor Trains, with Karim Halaseh and Tommi Muller, *Linear and Multilinear Algebra*, 2022

20. Multi-trek Separation in Linear Structural Equation Models, with Jean-Baptiste Seby, *SIAM Journal on Applied Algebra and Geometry*, 5:2 (2021) pp. 278-303

19. Optimal Rates for Estimation of Two-Dimensional Totally Positive Distributions, with Jan-Christian Hüter, Cheng Mao, and Philippe Rigollet, *Electronic Journal of Statistics*, 14:2 (2020) pp. 2600-2652

18. Estimation of Monge Matrices, with Jan-Christian Hüter, Cheng Mao, and Philippe Rigollet, *Bernoulli*, 26:4 (2020) pp. 3051-3080

17. Maximum Likelihood Estimation of Totally Positive and Log-concave Densities, with B. Sturmfels, Ngoc Tran, and C. Uhler, *Scandinavian Journal of Statistics*, 48:3 (2020) 817-844

16. Nested Covariance Determinants and Restricted Trek Separation in Gaussian Graphical Models, with M. Drton and L. Weihs, *Bernoulli* 26:4 (2020) pp. 2503-2540

15. Geometry of Log-Concave Density Estimation, with B. Sturmfels and C. Uhler, *Discrete and Computational Geometry* 61 (2019) pp.136-160

14. Duality of Graphical Models and Tensor Networks, with A. Seigal, *Information and Inference: A Journal of the IMA*, 8:2 (2019) pp. 273-288

13. Positive Semidefinite Rank and Nested Spectrahedra, with Kaie Kubjas and Richard Robinson, *Linear and Multilinear Algebra*, (2017/10/4), pp.1-23

12. Determinantal Generalizations of Instrumental Variables, with L. Weihs, B. Robinson, E. Dufrense, J. Kenkel, K. Kubjas, R. McGee II, N. Nguyen, and M. Drton, *Journal of Causal Inference*, **6:1** (2017) ISSN (Online) 2193-3685, <https://doi.org/10.1515/jci-2017-0009>

11. The Degree of $SO(n)$, with Madeline Brandt, DJ Bruce, Taylor Brysiewicz, and Robert Krone, *Combinatorial Algebraic Geometry, Fields Institute Communications*, **80**, Springer, New York, 2017. Editors: Gregory Smith and Bernd Sturmfels

10. Super-Resolution without Separation, with Geoffrey Schiebinger and Benjamin Recht: *Information and Inference: A Journal of the IMA*, *iax006*, <https://doi.org/10.1093/imaiai/iax006>

9. Singular Vectors of Orthogonally Decomposable Tensors, with Anna Seigal, *Linear and Multilinear Algebra*, 65:12 (2017), pp. 2457-2471

8. *Orthogonal and Unitary Tensor Decomposition from an Algebraic Perspective*, with Ada Boralevi, Jan Draisma and Emil Horobet, *Israel Journal of Mathematics*, 222:1 (2017), pp 223–260

7. *Decomposing Tensors into Frames*, with Luke Oeding and Bernd Sturmfels: *Advances in Applied Mathematics*, 73 (2016), pp. 125-153

6. *Orthogonal Decomposition of Symmetric Tensors: SLAM Journal on Matrix Analysis and Applications*, 37 (2016), pp. 86-102

5. *Fixed Points of the EM Algorithm and Nonnegative Rank Boundaries*, with Kaie Kubjas and Bernd Sturmfels: *Annals of Statistics*, 43:1 (2015), pp. 422-461

4. *Robust Toric Ideals*, with Adam Booher: *Journal of Symbolic Computation*, 68 (2015), pp. 254-264

3. *A Tropical Proof of the Brill-Noether Theorem*, with Philip Cools, Jan Darisma and Sam Payne: *Advances in Mathematics* 230 (2012), pp. 759-776

2. *Artificial Intelligence for Bidding Hex*, with Sam Payne: *Games of No Chance*, edited by Richard Nowakowski. Mathematical Sciences Research Institute Publications, 63. Cambridge University Press, Cambridge (2015), pp. 207-214

1. *An Extensive Survey of Graceful Trees*, Undergraduate Honors Thesis, Stanford University 2011

Work Experience

Google, Inc.

Software Engineering Intern in Research

Worked on identifying users' online behavior and grouping together different online tasks.

Mountain View, CA
May 2013 – Aug 2013

Facebook, Inc.

Software Engineering Intern

Developed new ways of analyzing incoming data in order to surface fake accounts.

Palo Alto, CA
June 2010 – Sept 2010

Invited Talks

Introduction to tensors CP decomposition, Lecture series at Tensors: Algebra, Geometry, and Applications

Fort Collins, CO
Jun, 2024

Learning Linear Causal Models via Algebraic Constraints, AAAI Bridge on Continuous Causality

Vancouver, BC
Feb, 2024

Learning Linear Causal Models via Algebraic Constraints, Analysis of Complex Data, Banff BIRS Workshop

Banff, AB
May, 2024

Learning Linear Causal Models via Algebraic Constraints, Statistics and Data Science Seminar, UCLA

Los Angeles, CA
May, 2024

Learning Linear Causal Models via Algebraic Constraints, André-Aisenstadt Prize Lecture, CRM

Montreal, QC
Dec, 2023

Learning Linear Causal Models via Algebraic Constraints, Mathematics of Machine Learning, CMS Meeting

Montreal, QC
Dec, 2023

Learning Linear Causal Models via Algebraic Constraints, Joint Statistics Meetings

Toronto, ON
Aug, 2024

Learning Linear Non-Gaussian Causal Models via Algebraic Constraints, When Causality Meets Statistics

Paris, France
Apr, 2023

Robust Eigenvectors of Symmetric Tensors, Joint Mathematics Meetings

Boston, MA
Jan, 2023

Linear Non-Gaussian Causal Models, Joint Mathematics Meetings

Boston, MA
Jan, 2023

Structured Log-Concave Density Estimation, Joint Mathematics Meetings

Boston, MA
Jan, 2023

Structured Log-Concave Density Estimation, Oberwolfach Mathematical Institute

Oberwolfach, Germany
Dec, 2022

Log-Concave Graphical Models, KTH Royal Institute of Technology

Online Seminar
Sep, 2022

Log-Concave Graphical Models, Combinatorial, Computational, and Applied Algebraic Geometry

Seattle, WA
June, 2022

Orthogonal and Incoherent Tensor Decompositions, CAIMS Annual Meeting Award Talk

Kelowna, BC
June, 2022

Log-Concave Graphical Models, Algebraic Statistics Conference

Honolulu, HI
May, 2022

Log-Concave Graphical Models, Algebra, Combinatorics, and Geometry Seminar, SFSU

Online Seminar
Nov, 2021

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| <i>Orthogonal and Incoherent Tensor Decompositions</i> , University of Idaho Mathematics Colloquium | Online Colloquium Nov, 2021 |
| <i>Hidden Variables in Linear Causal Models</i> , AMS Fall Western Sectional Meeting | Online Conference Oct, 2021 |
| <i>Log-Concave Graphical Models</i> , SIAM Conference on Applied Algebra and Geometry | Online Conference Aug, 2021 |
| <i>Orthogonal and Incoherent Tensor Decompositions</i> , International Conference on Large Scale Computation | Online Conference Jun, 2021 |
| <i>Orthogonal and Incoherent Tensor Decomposition</i> , SIAM Conference on Applied Linear Algebra | Online Conference May, 2021 |
| <i>Orthogonal Tensor Decomposition</i> , First Annual Meeting of Young Bulgarian Mathematicians | Online Conference May, 2021 |
| <i>Learning Totally Positive Densities</i> , High-dimensional Covariance Matrices, Networks and Inequalities | Online Workshop May, 2021 |
| <i>Orthogonal and Incoherent Tensor Decomposition</i> , Codes and Expansions Seminar | Online Seminar May, 2021 |
| <i>Hidden Variables in Non-Gaussian Linear Causal Models</i> , IPAM Workshop on Tensor Algorithms | Online Workshop May, 2021 |
| <i>Density Estimation under Total Positivity and Conditional Independence</i> , UBC/PIMS Colloquium | Vancouver, BC Apr, 2021 |
| <i>Hidden Variables in Linear Causal Models</i> , Number Theory and Algebraic Geometry Seminar, Simon Fraser | Online Seminar Apr, 2021 |
| <i>Estimating Totally Positive Densities</i> , SIAM Conference on Computational Science and Engineering | Online Conference Mar, 2021 |
| <i>Hidden Variables in Linear Causal Models</i> , Algebra in Statistics and Computation Seminar, UW Madison | Online Seminar Feb, 2021 |
| <i>Orthogonal Decomposition of Tensor Trains</i> , Working Geometry Seminar, Texas A&M | Online Seminar Feb, 2021 |
| <i>Orthogonal Decomposition of Tensor Trains</i> , Nonlinear Algebra Seminar Online | Online Seminar Nov, 2020 |
| <i>Hidden Variables in Linear Causal Models</i> , UBC IAM Colloquium | Online Colloquium Nov, 2020 |
| <i>Orthogonal Tensor Decomposition</i> , St Andrews University Pure Mathematics Colloquium | Online Colloquium Oct, 2020 |
| <i>Duality between Graphical Models and Tensor Networks</i> , Joint Statistical Meetings 2020 | Online Workshop Aug, 2020 |
| <i>Superresolution Imaging and Total Positivity</i> , Algebraic Statistics 2020 | Online Workshop Jun, 2020 |
| <i>Statistical Estimation under Total Positivity</i> , Boise State Mathematics Colloquium | Boise, ID Mar, 2020 |
| <i>Nonparametric Density Estimation of Totally Positive Distributions</i> , MIFODS Workshop, MIT | Cambridge, MA Jan, 2020 |
| <i>Orthogonal Tensor Decomposition</i> , Seminar on Alg. Geom., Simon Fraser University | Vancouver, BC Oct, 2019 |
| <i>Duality of Graphical Models and Tensor Networks</i> , AI and Tensor Factorizations Workshop | Santa Fe, NM Sep, 2019 |
| <i>Orthogonal Tensor Decomposition</i> , SIAM AG Conference, Early Career Prize Lecture | Bern, Switzerland Jul, 2019 |
| <i>Nested Covariance Determinants in Gaussian Graphical Models</i> , SIAM AG Conference | Bern, Switzerland Jul, 2019 |
| <i>Maximum Likelihood Estimation under Total Positivity</i> , Northeastern Pick My Brain Seminar | Boston, MA Mar, 2019 |
| <i>Statistical Estimation under Algebraic Constraints</i> , UW Madison Machine Learning Seminar | Madison, WI Mar, 2019 |
| <i>Statistical Estimation under Algebraic Constraints</i> , UNC Statistics and Optimization Colloquium | Chapel Hill, NC Feb, 2019 |
| <i>Algebraic Structure in Hidden Variable Models</i> , Duke Statistics Colloquium | Durham, NC Feb, 2019 |
| <i>Statistical Estimation under Algebraic Constraints</i> , Stanford Statistics Colloquium | Stanford, CA Jan, 2019 |
| <i>Statistical Estimation under Algebraic Constraints</i> , UBC Mathematics Colloquium | Vancouver, BC Jan, 2019 |
| <i>Maximum Likelihood Estimation under Total Positivity</i> , UBC Mathematics of Information Seminar | Vancouver, BC Jan, 2019 |
| <i>Statistical Estimation under Algebraic Constraints</i> , UC Irvine Mathematics | Irvine, CA Jan, 2019 |
| <i>Statistical Estimation under Algebraic Constraints</i> , Caltech CMS Frontiers | Pasadena, CA Jan 2019 |
| <i>Maximum Likelihood Estimation under Total Positivity</i> , U of Utah Stochastics Seminar | Salt Lake City, UT Dec, 2018 |

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| <i>Orthogonal Tensor Decomposition</i> , U of Utah Mathematics Colloquium | Salt Lake City, UT Dec, 2018 |
| <i>Maximum Likelihood Estimation under Total Positivity</i> , WORDS Workshop, Fuqua School of Business | Durham, NC Dec, 2018 |
| <i>Orthogonal Tensor Decomposition</i> , Duke Applied Math Seminar | Durham, NC Nov, 2018 |
| <i>Maximum Likelihood Estimation under Total Positivity</i> , CU Boulder Applied Math Seminar | Boulder, CO Nov, 2018 |
| <i>Graphical Models from the Perspective of Algebra and Geometry</i> , ICERM Nonlinear Algebra Bootcamp | Providence, RI Sep, 2018 |
| <i>Maximum Likelihood Estimation under Total Positivity</i> , SIAM Annual meeting minisymposium | Portland, OR July, 2018 |
| <i>Maximum Likelihood Estimation under Total Positivity</i> , Brandeis University | Waltham, MA Mar, 2018 |
| <i>Maximum Likelihood Estimation under Total Positivity</i> , UMass Amherst | Amherst, MA Feb, 2018 |
| <i>Maximum Likelihood Estimation under Total Positivity</i> , Applied Math Seminar at Johns Hopkins University | Baltimore, MD Feb, 2018 |
| <i>Maximum Likelihood Estimation under Total Positivity</i> , Applied Math Seminar at Duke | Durham, NC Jan, 2018 |
| <i>Maximum Likelihood Estimation under Total Positivity</i> , CAM Seminar at University of Chicago | Chicago, IL Jan, 2018 |
| <i>Maximum Likelihood Estimation under Total Positivity</i> , Microsoft Research | Redmond, WA Nov, 2017 |
| <i>Maximum Likelihood Estimation under Total Positivity</i> , CMO Oaxaca, Beyond Convexity workshop | Oaxaca, Mexico Oct, 2017 |
| <i>Decomposing Tensors into Frames</i> , SIAM-AG | Atlanta, GA Aug, 2017 |
| <i>Orthogonal Tensor Decomposition</i> , CBMS workshop on Tensors | Auburn, AL Jul, 2017 |
| <i>Geometry of Log-Concave Density Estimation</i> , Oberwolfach MFO Algebraic Statistics Meeting | Oberwolfach, Germany Apr, 2017 |
| <i>Geometry of Log-Concave Density Estimation</i> , Joint Math Meetings | Atlanta, GA Jan, 2017 |
| <i>Superresolution without Separation</i> , MIT LIDS Seminar | Cambridge, MA Sep, 2016 |
| <i>The Geometry of Positive Semidefinite Rank</i> , AMS Special Session | Salt Lake City, UT Apr, 2016 |
| <i>Orthogonal Tensor Decomposition</i> , ETH Zürich | Zürich, Switzerland Nov, 2015 |
| <i>Superresolution without Separation</i> , SIAM AG 2015 | Daejeon, South Korea Aug, 2015 |
| <i>Orthogonal Tensor Decomposition</i> , SIAM AG 2015 | Daejeon, South Korea Aug, 2015 |
| <i>The Geometry of Positive Semidefinite Rank</i> , SIAM AG 2015 | Daejeon, South Korea Aug, 2015 |
| <i>The Geometry of Positive Semidefinite Rank</i> , GOAL workshop | Berkeley, CA May 2015 |
| <i>Super-Resolution Imaging and Tchebychev Systems</i> , Seminar in Computational Algebraic Geometry | Berkeley, CA Mar 2015 |
| <i>Orthogonal Tensor Decomposition</i> , Tensors in Computer Science and Geometry | Berkeley, CA Nov 2014 |
| <i>Orthogonal Tensor Decomposition</i> , Computational Algebraic Geometry Seminar | Berkeley, CA Oct 2014 |
| <i>Orthogonal Tensor Decomposition</i> , Benjamin Recht's Group Meeting | Berkeley, CA Oct 2014 |
| <i>Robust Toric Ideals</i> , Western Fall Sectional AMS Meeting | San Francisco, CA Oct 2014 |
| <i>Orthogonal Tensor Decomposition</i> , Western Fall Sectional AMS Meeting | San Francisco, CA Oct 2014 |
| <i>Orthogonal Tensor Decomposition</i> , AMS Meeting Eau-Claire | Eau-Claire, WI Sep 2014 |
| <i>Orthogonally Decomposable Tensors</i> , Workshop on the Method of Moments and Spectral Learning, ICML 2014 | Beijing, China Jun 2014 |
| <i>Orthogonally Decomposable Tensors</i> , Optimization and Algebraic Geometry | Daejeon, South Korea Jun 2014 |
| <i>Fixed Points of the EM Algorithm and Nonnegative Rank Boundaries</i> , Computer Science Seminar, U Washington | Seattle, WA May, 2014 |

Fixed Points of the EM Algorithm and Nonnegative Rank Boundaries, Applications of Real Algebraic Geometry Helsinki, Finland
Mar 2014

A Tropical Proof of the Brill-Noether Theorem, Joint Mathematical Meeting Boston, MA
Jan 2012

How to win in Bidding Hex. Stanford Undergraduate Math Organization speaker series Stanford, CA
May 2011

Teaching Experience

Instructor and course design
UBC Math 605D Graphical Models and Causal Inference Vancouver, BC
Spring 2022, Fall 2024

Instructor and course design
UBC Math 605D Tensor Decompositions and Their Applications; a graduate student topics course Vancouver, BC
Fall, 2020, 2022

Instructor
UBC Math 307 Applied Linear Algebra; Math 303 Introduction to Stochastic Processes; Math 302 Introduction to Probability; Math 223 Honors Linear Algebra Vancouver, BC
2019-2024

Instructor
MIT IDS.136 / 6.244 Graphical Models: A Combinatorial, Algebraic and Geometric Perspective Cambridge, MA
Co-taught together with Caroline Uhler Spring, 2019

Instructor and course design
MIT IDS.S21 / 6.248 Graphical Models: A Combinatorial, Algebraic and Geometric Perspective Cambridge, MA
Developed and co-taught a new class together with Caroline Uhler Spring, 2016

Teaching Assistant
MIT 18.03 Introduction to Differential Equations Cambridge, MA
Fall 2016

Graduate Student Instructor
Math 10B Methods of Mathematics: Calculus, Statistics, and Combinatorics Berkeley, CA
Teaching discussion for two sections of 25 students each. Course instructor: Bernd Sturmfels. Spring 2015

Math Circle Lecturer
Semesterly lectures to advanced math high-school students at UC Berkeley and UBC 2012 - 2021

Center for Teaching and Learning – Stanford University
Appointment Tutor for Academic Years 2008-2011 Stanford, CA
Meeting students in individual appointments and helping them in Mathematics and Computer Science. Apr 2008 – June 2011

Stanford Math Department
Grader Stanford, CA
Grading homework for various mathematics classes: Math 42, 51H, 52H, 108, 121. Jan 2008 – June 2011

Advanced Math Group in High School
Group leader Sofia, Bulgaria
Organized and taught a series of lectures in advanced mathematics to prepare younger students for Mathematical Olympiads. A few of them participated successfully at the IMO. Sept 2006 – May 2007

Academic Service
Tensors: Algebra, Geometry, and Applications 2024 Co-Organizer Fort Collins, CO
Summer school and workshop May - Jun, 2024

IMSI Semester Long Program Co-Organizer Chicago, IL
Algebraic Statistics in Our Changing World Sep - Dec, 2023

BIRS Oaxaca Workshop Co-Organizer Oaxaca, Mexico
Computations and Data in Algebraic Statistics May, 2023

IPAM Semester Long Program Co-Organizer Los Angeles, CA
Tensor Methods and Emerging Applications to the Physical and Data Sciences Mar - Jun, 2021

Minisymposium (Co-)Organization

- ❑ **CMS Winter Meeting: Mathematics of Machine Learning** Richmond, BC
Dec, 2024
- ❑ **SIAM AG Meeting: Theory and Methods for Tensor Decomposition,** Bern, Switzerland
Jul 2019
- ❑ **SIAM AG Meeting: Graphical Models** Bern, Switzerland
Jul 2019
- ❑ **Joint Statistical Meetings: Algebraic Methods in Statistics** Vancouver, BC
Jul 2018

- ❑ **SIAM Annual Meeting:** *Theoretical Challenges in Tensor Decomposition*

Portland, OR
Jul 2018

Seminar (Co-)Organization

- ❑ **Algebraic Statistics Online Seminar:** A worldwide virtual seminar series
- ❑ **MIT Seminar on Applied Algebra and Geometry:** organizer and founder

Online seminar
2020 – 2021
Cambridge, MA
2017 – 2018

Associate Editor for Bernoulli Journal, 2025 – 2029

**Students
and
Postdocs**

Graduate Students

- ❑ Cole Gigliotti (UBC)
- ❑ Hossein Rahmani (UBC)
- ❑ Vincent Guan (UBC)
- ❑ Pardis Semnani (UBC)
- ❑ Bakytzhan Kurmanbek (UBC)
- ❑ Reza Sadoughian (UBC)
- ❑ Mateusz Faltyn (UBC)
- ❑ Bakytzhan Kurmanbek (UBC)
- ❑ Damara Gagnier (UBC)
- ❑ Jean-Baptiste Seby (MIT)

Undergraduate Students

- ❑ Aditya Raj Dash (MITACS)
- ❑ Zixuan Yao (MITACS)
- ❑ Joshua Boyd (UBC)
- ❑ Young Lin (UBC)
- ❑ Chrisian Campbell (UBC)
- ❑ Niko Nikov (UBC)
- ❑ Alex Dong (UBC)
- ❑ Jaipratap Grewal (UToronto)
- ❑ Tommi Muller (UBC)
- ❑ Karim Halaseh (UBC)
- ❑ Yiheng Liu (UBC)
- ❑ Huanqing Wang (UBC)
- ❑ Ali Zartash (MIT)
- ❑ Melinda Sun (MIT)

Postdocs

- ❑ Maksym Zubkov (UBC)
- ❑ Marina Garrote-López (UBC)