

Neriman Tokcan- Detailed CV

CONTACT INFORMATION

Wheatley Hall, 100 William T
Morrissey Blvd Boston, MA 02125
University of Massachusetts Boston

webpage: <https://nerimantokcan.com>
E-mail: neriman.tokcan@umb.edu

RESEARCH INTERESTS

My research focuses on the development of mathematical and computational frameworks for analyzing high-dimensional, multimodal data. I develop tensor factorization and machine learning methods for latent feature extraction, clustering, denoising, dimensionality reduction, data integration, imputation, and multimodal data fusion. These methods draw upon multilinear algebra, optimization, and algebraic geometry to provide interpretable models for complex biological systems.

I apply these approaches to computational biology, bioinformatics, and cancer genomics, with a particular emphasis on integrating multi-omics and spatial omics data to uncover the molecular and cellular mechanisms that govern tumor heterogeneity, cell-cell communication, and the evolution of the tumor microenvironment in classical Hodgkin lymphoma, glioblastoma, and breast cancer.

APPOINTMENTS

University of Massachusetts Boston 01/2023 - present

Assistant Professor of Applied Mathematics

Broad Institute of MIT and Harvard, Cambridge MA 09/2019 - 01/2023

Supervisors: Caroline Uhler, Todd Golub, Aviv Regev

Research focus: Deep learning methods for spatially resolved transcriptome analysis; high-dimensional tensor frameworks to model tumor microenvironments.

Eric and Wendy Schmidt Center Postdoctoral Fellow, 09/2021 - 01/2023

<https://www.broadinstitute.org/ewsc>

Computational Postdoctoral Associate

– Golub Lab, 09/2020 - 01/2023

<https://golublab.broadinstitute.org/>

– Regev Lab, 09/2019 - 08/2021

<https://www.broadinstitute.org/regev-lab>

Institute for Pure and Applied Mathematics (IPAM), UCLA Spring 2021

Fellow for the Tensor Methods and Emerging Applications to the Physical and Data Sciences
Spring Semester Program

University of Michigan (UMICH), Ann Arbor, MI 08/2017 - 09/2019

Supervisors: Harm Derksen, Kayvan Najarian

Research focus: Algebraic tools for multimodal data analysis; clinical decision support platforms to predict complications and recovery trends for patients following cardiac surgery.

– Postdoctoral Assistant Professor of Mathematics

- Postdoctoral Researcher at the Biomedical and Clinical Informatics Lab, Department of Computational Medicine and Bioinformatics
<https://najarianlab.ccmb.med.umich.edu/>

EDUCATION

University of Illinois at Urbana-Champaign (UIUC), Urbana IL	08/2017
Ph.D. in Mathematics	
Advisor: Bruce Reznick	
Research focus: decomposition of homogeneous polynomials, algebraic geometry tools for symmetric tensor decomposition, Newton polytopes in algebraic combinatorics	
Dissertation Title: “ <i>Relative Waring Rank of Binary Forms</i> ”	
University of Illinois at Urbana-Champaign (UIUC), Urbana IL	12/2012
M.S. in Mathematics	
Cukurova University, Adana Turkey	06/2009
B.S. in Mathematics	

PEER-REVIEWED PUBLICATIONS

1. N. Tokcan*, V. Shanmugam*, D. Chafamo, S. Sullivan, M. Borji, H. Martin, G. Newton, N. Nadaf, S. Hanbury, I. Barrera, D. Cable, J. Weir, O. Ashenberg, G. Pinkus, S. Rodig, C. Uhler, E. Macosko, M. Shipp, A. Louissaint Jr, F. Chen, T. Golub, *Genome-scale spatial mapping of the Hodgkin lymphoma microenvironment identifies tumor cell survival factors*, Nature Communications 17, 838 (2026) <https://doi.org/10.1038/s41467-025-67539-1>.
2. N. Tokcan, et al., *Tensor decompositions for signal processing: Theory, advances, and applications*, Signal Processing (2025): 110191, <https://doi.org/10.1016/j.sigpro.2025.110191>.
3. A. Khoshnam, D. Chafamo, N. Tokcan, *Tensor-Based Approaches for Omics Data Analysis: Applications, Challenges, and Future Directions*, La Matematica (2025): 1-35, <https://doi.org/10.1007/s44007-025-00149-x>.
4. D. Chafamo, V. Shanmugam, N. Tokcan, *C-ziptf: stable tensor factorization for zero-inflated multi-dimensional genomics data*, BMC Bioinformatics 25, 323 (2024). <https://doi.org/10.1186/s12859-024-05886-4>
5. T. Biancalani, G. Scalia, L. Buffoni, R. Avasthi, Z. Lu, A. Sanger, N. Tokcan, C. R. Vanderburg, A. Segerstolpe, M. Zhang, I. Avraham-Davidi, S. Vickovic, M. Nitzan, S. Ma, J. Buenrostro, N. B. Brown, D. Fanelli, X. Zhuang, E. Z. Macosko and A. Regev, *Deep learning and alignment of spatially-resolved whole transcriptomes of single cells in the mouse brain with Tangram*, Nature Methods (2021), <https://doi.org/10.1038/s41592-021-01264-7>.
6. L. Hernandez, R. Kim, N. Tokcan, H. Derksen, B.E. Biesterveld, A. Croteau, A. M. Williams, M. Mathis, K. Najarian, and J. Gryak, *Multimodal Tensor-Based Method for Integrative and Continuous Patient Monitoring During Postoperative Cardiac Care*, Artificial Intelligence in Medicine **113** (2021), 102032, <https://doi.org/10.1016/j.artmed.2021.102032>.
7. N. Tokcan, J. Gryak, K. Najarian, and H. Derksen, *Algebraic Methods for Tensor Data*, SIAM Journal on Applied Algebra and Geometry, **5** (2021), no.1, 1-27, <https://epubs.siam.org/doi/10.1137/19M1272494>.

8. M. R. Mathis, M. Engoren, S. Kheterpal, K. Gunnerson, A. Williams, B. Biesterveld, A. Croteau, K. Ward, H. Alam, H. Derksen, G. Liu, R. Kim, N. Tokcan, K. Najarian, J. Gryak, *Early Detection of Postoperative Deterioration in Cardiac Surgery Patients using Electronic Health Record and Waveform Data: A Machine Learning Approach*, *Anesthesia and Analgesia* **132**, no. 5, pp. 999-1003 (2021).
9. C. Monical, N. Tokcan, A. Yong, *Newton polytopes in algebraic combinatorics*, *Selecta Mathematica (N.S.)* **25** (2019), no. 5, <https://doi.org/10.1007/s00029-019-0513-8>.
10. B. Reznick and N. Tokcan, *Binary forms with three different relative ranks*, *Proceedings of the American Mathematical Society* **145** (2017), 5169-5177, <https://doi.org/10.1090/proc/13666>.
11. N. Tokcan, *On the Waring rank of binary forms*, *Linear Algebra and Its Applications* **524** (2017), 250-262, <https://doi.org/10.1016/j.laa.2017.03.007>.
12. R. Mancuso, R. Pellizzoni, N. Tokcan, M. Caccamo, *WCET Derivation Under Single Core Equivalence With Explicit Memory Budget Assignment*, *Proceedings of the 29th Euromicro Conference on Real-Time Systems (ECRTS 2017)*, Dubrovnik, Croatia, pp. 3:1-3:23, <https://doi.org/10.4230/LIPIcs.ECRTS.2017.3>
13. Relative Waring Rank of Binary Forms, Ph.D. thesis, available online at <https://www.ideals.illinois.edu/handle/2142/98327>.

PUBLISHED
CONFERENCE
ABSTRACTS
(CANCER BIOLOGY)

1. J. J. Peng, S. Oliver, N. Freeburg, G. Gopikrishna, D. Chafamo, N. Tokcan, D. O'Rourke, I. Nasrallah, Z. Binder, D. Silverbush, M. Nasrallah, *Whole-Brain Neuropathologic and Transcriptomic Profiling Reveals Tumor-Associated Oligodendrocyte Reactivity in Glioblastoma*, *Journal of Neuropathology & Experimental Neurology* **85** (6) (2026), 579. Published conference abstract, 102nd Annual Meeting of the American Association of Neuropathologists (AANP), Cambridge, MD, USA.
2. J. J. Peng, S. N. Oliver, N. F. Freeburg, G. K. Gopikrishna, D. Chafamo, N. Tokcan, D. M. O'Rourke, M. P. Nasrallah, Z. A. Binder, *Denoising Postmortem Single-Nuclei Data Reveals Glioblastoma-Adjacent Inflammatory Oligodendrocytes Suggestive of an Injury-Like Response*, *Neuro-Oncology* **27** (Supplement 5) (2025), v10. Published conference abstract (30th Annual Meeting of the Society for Neuro-Oncology, Honolulu, HI, USA). <https://doi.org/10.1093/neuonc/noaf201.0036>
3. V. Shanmugam, N. Tokcan, D. Chafamo, S. Sullivan, H. Martin, G. A. Newton, M. Borji et al., *Genome-Scale High-Resolution Spatial Mapping of the Pro-Tumorigenic Cellular Niche in Classic Hodgkin Lymphoma*, *Blood* **142** (2023). Published conference abstract (65th American Society of Hematology (ASH) Annual Meeting and Exposition, San Diego, CA, USA). <https://doi.org/10.1182/blood-2023-185522>

PATENTS

Tensor Amplification-Based Data Processing

Patent no: US20210338171A1

Application no: 17/167,140.0

Publication date: 2021-11-04

Inventors: Harm Derksen, Neriman Tokcan, Kayvan Najarian, Jonathan Gryak

GRANTS

Michigan Precision Health Scholars Award, 2018-2020
University of Michigan, Ann Arbor
Project: *A Novel Tensor Similarity Score for the Classification of Cardiac Index*
Funding: USD 240,000
Role: PI
Award Nr.: U063159

HONORS, FELLOWSHIPS, AWARDS

STEMPOWER Faculty Fellow, University of Massachusetts Boston, 2026–2027
SIAM Travel Award, SIAM Conference on Applied Algebraic Geometry (AG23), 07/2023
SIAM Early Career Travel Award, SIAM Conference on Optimization (OP23), 06/2023
Junior Leader for the Simons Semester, Fall 2022
Institute of Mathematics of the Polish Academy of Sciences
–*AGATES program: Algebraic Geometry with Applications to Tensors and Secants*
Travel Award, SIAM Conference on Mathematics of Data Science (MDS22), 08/2022
Early Career Travel Award, SIAM Conference on Applied Algebraic Geometry (AG21), 08/2021
Fellowship at the Institute for Pure and Applied Mathematics, UCLA (March-June 2021)
–*Program on Tensor Methods and Emerging Applications to the Physical and Data Sciences*
Irving Reiner Memorial Award in Algebra, UIUC, 2017
Campus Research Board Award, UIUC, Spring 2017
AMS Graduate Student Travel Grant to the Joint Mathematics Meetings, 2016
Nominated for Departmental TA Instructional Award, UIUC, Fall 2016
Finalist for Departmental TA Instructional Award, UIUC, Fall 2015
List of Teachers Ranked as Excellent by students, UIUC, Fall 2014, Spring 2015, Summer 2015, Fall 2015, Spring 2016(with outstanding rating)
Doctoral fellowship, Council of Higher Education of Turkey, 2011
Doctoral fellowship, Republic of Turkey Ministry of National Education, 2011-2017
Doctoral fellowship, Scientific and Technological Research Council of Turkey (TUBITAK), 2009
Ranked first among the Department of Mathematics graduates, Cukurova University, 2009
Ranked first among the College of Sciences and Letters graduates, Cukurova University, 2009
High Honor Award, Cukurova University, each semester 2006-2009

INVITED TALKS

SIAM Texas-Louisiana Sectional Meeting
October 30–November 1, 2026
Talk title: TBA

27th Conference of the International Linear Algebra Society ILAS 2026
Blacksburg, VA, USA 05/2026
Talk title: Tensor Methods for Multi-omics Data

SIAM Conference on Applied Algebraic Geometry (AG25)
University of Wisconsin-Madison, 07/2025
Talk title: C-ZIPTF: Stable Tensor Factorization for Zero-inflated Multi-dimensional Genomics Data

Mathematics Department Colloquium
Idaho State University, 03/07/2025
Talk title: Tensor Methods for Omics Data Analysis

UMB-DF/HCC Partnership Monthly Scientific Meeting
University of Massachusetts Boston, 01/31/2025
Talk title: Tensor Methods for Integrative Multi-Omics Approaches in Cancer Research

TensorDec Laboratory, Masterclass 2024
Department of Mathematics, University of Trento, Italy
Class title: Tensor Decompositions and Applications in Multi-Omics Data Analysis
Delivered 2 lectures daily, November 25–29, 2024

Collegio Clesio, Seminar, 11/28/2024
University of Trento, Italy
Talk title: Beyond the genome: revealing the complex language of life with advanced Data Science

Models, Inference & Algorithms (MI), 10/30/2024
Broad Institute of MIT and Harvard
Talk titles: Primer: Tensor Methods for Omics Data Analysis
C-ZIPTF: stable tensor factorization for zero-inflated multi-dimensional genomics data

Tensors Algebra-Geometry-Applications 06/2024
Colorado State University Rock Mountain Campus
Talk title: Tensor methods for omics data analysis

SIAM Conference on Applied Linear Algebra (LA24)
Sorbonne Université, Paris, France, 05/2024
Talk title: Tensor Methods for Multi-Modal Genomics Data

Applied and Computational Mathematics Seminar
Tufts University, 02/12/2024
Talk title: Tensor Methods for Multi-Modal Genomics Data

ICERM workshop on “Connecting Higher-Order Statistics and Symmetric Tensors”
Brown University, 01/2024
Talk title: Zero-Inflated Poisson Tensor Factorization for Multimodal Genomics Data

Tensor Methods and Emerging Applications to the Physical and Data Sciences
Core Participant Reunion Conference UCLA, 12/2023
Talk title: Tensor Methods for Multi-Modal Genomics Data

Workshop “Algebraic Statistics for Ecological and Biological Systems”
The Institute for Mathematical and Statistical Innovation, University of Chicago, 10/2023
Talk title: Modeling Tumor Microenvironments with Zero-Inflated Bayesian Consensus Tensor Factorization

Workshop “Invitation to Algebraic Statistics and Applications”
The Institute for Mathematical and Statistical Innovation, University of Chicago, 09/2023
Talk title: What will happen in Ecological/Biological applications?

10th International Congress on Industrial and Applied Mathematics (ICIAM)
Tokyo, Japan, 08/2023
Talk title: *A probabilistic nonnegative tensor factorization for tumor microenvironment analysis*

SIAM Conference on Applied Algebraic Geometry (AG23)
Eindhoven, Netherlands, 07/2023
Talk title: *Cancer Classification and Pathway Discovery Using Non-Negative Tensor Factorization*

SIAM Conference on Optimization (OP23)
Seattle, 06/2023
Talk title: *A Non-Negative Probabilistic Tensor Decomposition and Applications in Cancer Genomics*

The 36th New England Statistics Symposium (NESS 2023)
Boston University, 05/2023
Talk title: *Non-negative tensor factorization methods and applications*

NSF-Simons Center for Quantitative Biology Seminar
Harvard University & Harvard Medical School, 05/2023
Talk title: *Cancer Classification and Pathway Discovery Using Non-Negative Tensor Factorization*

University of Trento, Department of Mathematics seminar
Italy, 12/2022
Talk title: *Non-negative consensus tensor factorization and applications*

AGATES Workshop on “Algebraic Geometry with Applications to Tensors and Secants”
Poland, Warsaw, 11/2022
Talk title: *Non-negative tensor decompositions and applications in cancer genomics*

Oxford Applied Topology Seminar
England, 11/2022
Talk title: *Tensor-based frameworks for genomics*

SIAM Conference on Mathematics of Data Science
San Diego, 09/2022
Talk title: *Tensor-Based Frameworks in Cancer Genomics*

Seminar Series on Single-Cell Discussion
Broad Institute, Dana Farber Cancer Institute, 05/2022
organizers: Dana Silverbush and Erin M. Parry
Talk title: *Spatial transcriptomics approaches for tumor microenvironment analysis*

Mini-workshop on Algebraic Statistics, Harvard Statistics Department
Boston, 04/2022
Talk title: *Algebraic Tools for Tensor Analysis*

Department of Mathematics Seminar
UMass Boston, 02/2022
Talk title: *Tensor methods for multimodal data*

Division of Applied Mathematics Seminar
Brown University, 02/2022
Talk title: *Tensor-based frameworks for multimodal data analysis*

AlToGeLiS: Seminar-online 12/2021
Talk title: *Tensor decomposition for multi-modal data analysis*

Cancer Program Seminar
Broad Institute of MIT and Harvard, 10/2021
Talk title: *Tensor-based frameworks for the analysis of tumor microenvironments*

Topics in Algebra, Topology, Etc., Research Seminar
Boise State University, 10/2021
Talk title: *Tensor-based frameworks for multimodal data analysis*

SIAM Conference on Applied Algebraic Geometry (AG21)
online, 08/2021
Talk title: *Algebraic Methods for Tensor Data*

Institute for Advanced and Pure and Applied Mathematics
UCLA, 06/2021
Talk title: *Kernelization of Tensor-Based Models*

Teaching and Diversity Seminar
University of Illinois at Urbana-Champaign, 03/2021
Panel title: *Life After UIUC*

Cancer Data Science Platform Seminar
Broad Institute of MIT and Harvard, 01/2021
Talk title: *Tensor Methods for Cancer Genomics Data*

Precision Health Symposium
University of Michigan Ann Arbor, 05/2019
Talk title: *Tensor Methods for Biomedical Data Analysis*

Broad Institute of MIT and Harvard, Cambridge, MA, 04/2019
Talk title: *Tensors for multi-dimensional data analysis*

Joint Mathematics and Computer Science Department Seminar
Boston University, 03/2019
Talk title: *Tensor amplification and applications in multi-dimensional data analysis*

AMS Joint Mathematics Meetings 2018
University of Michigan Ann Arbor, 10/2018
Talk title: *Tensor decomposition and applications in Computational Medicine*

UMICH Michigan Institute for Clinical and Health Research (MICHR)
Ann Arbor, Michigan, 10/2018
Talk title: *Tensor Analysis for Biomedical Data Processing*

Biomedical and Clinical Informatics Lab Seminar
University of Michigan Ann Arbor , 05/2018
Talk title: *Tensors for Data Analysis*

Combinatorics Seminar
University of Michigan Ann Arbor, 04/2018
Talk title : *Newton Polytopes in Algebraic Combinatorics*

UMICH Biomedical and Clinical Informatics Lab Seminar
University of Michigan Ann Arbor, Fall 2017
Series of talks on tensor decomposition and applications
Audience: Interdisciplinary audience composed of industry practitioners, clinicians and academicians

Midwest Algebraic Geometry Graduate Conference
University of Illinois at Chicago, 04/2017
Talk title : *A Lower Bound for the Waring Rank*

AMS Joint Mathematics Meetings 2017
Atlanta, 01/2017
Talk title: *Relative Ranks of Binary Forms*

Summer School on Real Algebraic Geometry and Optimization
Georgia Tech University, 07/2016 Talk title: *Binary Forms with Three Different Relative Ranks*

Women in Mathematics Seminar
University of Illinois at Urbana-Champaign, 05/2015
Talk title: *Length of Binary Forms*

POSTER
PRESENTATIONS

Combinatorial, Computational, and Applied Algebraic Geometry (CCAAGS'22)
Seattle, 06/2022
Poster title: *Tensor Methods for Cancer Genomics*

MIT-Mass General Brigham (MGB) AI Cures Conference
Boston, 04/2022
Poster title: *Tensor based framework for the analysis of tumor microenvironment*

Military Health System Research Symposium
Kissimmee, FL, 08/2018
Poster title: *A Novel Tensor Similarity Score for the Classification of Cardiac Index from ECG Signals*

ALGECOM – Algebra, Geometry and Combinatorics Day
Purdue University, 10/2016
Poster title: *Waring's problem for binary forms*

OTHER RESEARCH EXPERIENCE

Research Assistant, Illinois Coordinated Science Laboratory, UIUC, Summer 2016
Supervisor: Negar Kiyavash, Department of Electrical and Computer Engineering
Topics: Graph deanonymization, graph matching, privacy of social graphs

Research Assistant, Department of Mathematics, UIUC, Summer 2014, 2015

Advisor: Bruce Reznick

Topics: Sum of Squares Optimization, Hilbert's 17th problem, the Waring problem for binary forms

Research Assistant, Department of Mathematics, UIUC, Summer 2013

Supervisor: Maarten Bergvelt

Topics: Symmetric Polynomials and Representation Theory

TEACHING EXPERIENCE

Instructor, UMass Boston

MATH 260, Linear Algebra Fall 2026

Classic lecture format, 25–30 students

MATH 345, Probability and Statistics 2023–2026

Classic lecture format, 25–30 students

Instructor, UMICH

Math 214, Applied Linear Algebra Fall 2018

Classic lecture format, 70 students

<http://www.math.lsa.umich.edu/courses/214/>

Math 217, Linear Algebra Fall 2017

Inquiry-Based Learning (IBL) format, 18 students

<http://www.math.lsa.umich.edu/ibl/217.html>

UIUC

Instructor

Calculus Summer 2015

Introduction to PDE

(Merit Program for Emerging Scholars) Spring 2016

The Merit Program for Emerging Scholars supports academically talented undergraduate students from groups historically underrepresented in STEM through enriched coursework and mentoring. Both courses listed above were recognized on the University of Illinois List of Teachers Ranked as Excellent by Students, with the Merit Program workshop receiving an overall evaluation of 5.0/5.0.

Teaching Assistant

Calculus Fall 2013

Calculus I Fall 2014, Fall 2015

Calculus for Business I Spring 2014, Spring 2015

Recognized on the University of Illinois List of Teachers Ranked as Excellent by Students for every semester listed above.

Graduate Student Mentoring

Computational Sciences Ph.D. Program, UMass Boston (Fall 2023–present)

Research area: Omics data integration for glioblastoma modeling and tensor-based methods for breast cancer subtype classification.

Integrative Biosciences Ph.D. Program, UMass Boston (Fall 2023–present)

Research area: Multi-omics approaches in cancer biology.

Undergraduate Research Mentoring

STEMPOWER Faculty Fellow, UMass Boston & UMass Amherst (Fall 2026–Spring 2027)

UMass Boston Honors College (Spring 2025)

Honors Thesis: *Introduction to Tensor Methods for Biological Data Analysis*.

MIT UROP (Fall 2022)

Project: Spatial transcriptomics analysis for cancer genomics.

Broad Summer Research Program, Broad Institute (Summer 2021)

Project: Computational methods for spatial transcriptomics and integrative analysis of the classical Hodgkin lymphoma tumor microenvironment.

Broad Institute (Fall 2020)

Project: Computational methods for the analysis and visualization of spatially resolved RNA-seq data.

University of Michigan UROP (Fall 2018)

Project: Tensors for data analysis.

Illinois Geometry Lab, University of Illinois Urbana–Champaign (Fall 2014)

Project manager for a team of four undergraduate researchers. Project: Elliptesque and Hyperbolesque Curves.

Teaching Mentoring

Teaching Assistant Mentor, Department of Mathematics, UIUC (Fall 2016)

Mentored graduate teaching assistants through classroom observations, feedback, and instructional guidance.

Faculty Success Program, National Center for Faculty Development & Diversity (NCFDD)

Completion Date: 04/2025

A 10-week virtual program designed to enhance academic productivity, establish sustainable writing habits, and promote work-life balance through expert coaching and peer support.

Certificate of Recognition, Broad Institute of MIT and Harvard, Summer 2021

This certificate was given to recognize the commitment and dedication as a mentor for the 2021 Broad Summer Research Program.

CIMER Research Mentor Training Program, Certificate of Completion, Summer 2021

I completed CIMER(Center for the Improvement of Mentored Experiences in Research) Mentoring Program focusing on mentoring undergraduate students in the areas of genomics/biology.

Minisymposium co-organizer
SIAM Texas-Louisiana Sectional Meeting 2026
Southern Methodist University in Dallas, Texas, 10/30/2026-11/1/2026.
Session title: *Mathematical and Computational Methods for High-Dimensional Biological Data*

Minisymposium co-organizer and session chair
SIAM Conference on Applied Algebraic Geometry (AG25)
University of Wisconsin-Madison, 07/2025
Session titles: *Tensors in Applications I-IV*

Special session co-organizer and area chair
European Signal Processing Conference EUSIPCO 2024
Lyon, France, 08/2024
Session title: *Advances in tensor theory and their application*

Minisymposium co-organizer and chair
SIAM Conference on Applied Linear Algebra (LA24)
Sorbonne Université, Paris, France
Minisymposium title: *Tensor Decompositions and Algorithms*

Co-organizer and chair for special sessions
SIAM Conference on Applied Algebraic Geometry
Eindhoven, Netherlands, 07/2023
Session titles: *Tensors in Applications I-IV*

Program committee member
36th New The 36th New England Statistics Symposium (NESS 2023)
Boston, 05/2023

Organizer and chair for the Invited Sessions
The 36th New England Statistics Symposium (NESS 2023)
Boston, 05/2023
Session titles: *Tensor Methods in High-dimensional Statistics & Tensor Methods for Modern Data Science*

Special Session co-organizer
2023 Joint Mathematics Meetings
Boston, 01/2023
Session title: *Applications of Tensors in Computer Science*

Minisymposium co-organizer and chair
SIAM Conference on Mathematics of Data Science
San Diego, 09/2022
Minisymposium title: *Multilinear Algebra and Tensors for Data Science*

Co-organiser of a new international consortium:
AlToGeLiS: Algebra, Topology, Geometry, and the Life Sciences (2022)

Faculty Host for AMS Sectional Meeting, Ann Arbor, MI, October 20-21 2018

Journal Reviewer

Biology Methods & Protocols, 2026
IEEE Signal Processing Letters, 2026
PLOS Computational Biology, 2026
Bioinformatics- Oxford Academic, 2025-present

Optimization Letters, 2025-present
 La Matematica (Official Journal of the Association for Women in Mathematics), 2024-present
 Linear Algebra and Its Applications, 2024-2025
 Metabolomics, Springer Nature, 2024
 Cell Report Methods, Cell Press, 2024
 Journal of the Royal Statistical Society: Series B, Oxford University Press, 2023-2024
 Linear and Multilinear Algebra, 2022
 iScience: Cell Press, 2020

Book Reviewer

Springer Nature, October 2019
 Topic: Linear Algebra for advanced undergraduate level and graduate level

INSTITUTIONAL & DEPARTMENTAL SERVICE

University of Massachusetts Boston

Tenure-Track Faculty Search Committee Member, Department of Mathematics (2026-2027)
 Department Personnel Committee Member (Spring 2026)
 Integrative Biosciences Ph.D. Program Committee Member (Spring 2026–present)
 Mathematics Graduate Program Committee Member (September 2023–present)
 Mathematics Curriculum Committee Member (Fall 2023–Spring 2026)
 Mathematics Seminar Committee Member (Fall 2023–Spring 2026); Chair (Spring 2025)
 Department Representative, UMass Boston Open House (Fall 2023, Fall 2024)

University of Michigan

Publication Coordinator, Biomedical and Clinical Informatics Laboratory (2018)
 Graduate Admissions Committee Member, Department of Mathematics (Fall 2017)

University of Illinois Urbana–Champaign

Co-Organizer, Teaching Assistant Training Program (Fall 2016)

- Assisted in organizing the Mathematics Teaching Assistant training program for incoming and current graduate teaching assistants.
- Organized workshops on “Practice Teaching for New TAs” and “Maximizing Learning Opportunities in a Multicultural Classroom.”

Teaching Evaluator, Teaching Assistant Orientation (Fall 2016)

- Observed teaching demonstrations of incoming graduate teaching assistants.
- Made recommendations regarding teaching and grading assignments.