Mustafa Hajij

Assistant Professor of Data Science

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Professional Experience

Academic Experience

2022-Now	**Assistant Professor of Data Science**, *The MSDS program*, University of San Francisco.
2020-2022	**Assistant Professor of Data Science**, *Department of Mathematics and Computer Science*, Santa Clara University.
2018-2019	**Computer Science Researcher**, *Topology, Geometry, and Data Analysis group (TGDA@OSU), Department of Computer Science and Engineering*, Ohio State University.
2017-2018	**NSF Postdoctoral Scholar**, *Department of Computer Science and Engineering*, University of South Florida.
2015-2017	**Postdoctoral Scholar**, *Department of Mathematics and Statistics*, University of South Florida.
2013-2015	**Research Assistant**, *LSU Geometric and Visual Computing Lab*, Department of Computer Science and Engineering, Louisiana State University.

Industrial Experience

Sep 2021-now	**Cofounder**, *AltumX*.
	• *AltumX* is a startup specialized in bringing intelligent solutions to road networks.
Sep 2019-2020	**AI Research Scientist**, *KLA Corporation*.
	• Incorporate uncertainty and stochasticity in data into physics simulation systems at KLA using deep learning techniques. • Building novel optimization softwares to calibrate real data to simulated data. • Hiring and monitoring other team members.

Education

2015	**Ph.D. in Mathematics**, Louisiana State University.
2015	**M.S. in Computer Science**, Louisiana State University.
2008	**M.S. in Mathematics**, Jordan University for Science and Technology.
2005	**B.S. in Mathematics**, Damascus University.

Research Interests

Primarily I am interested in Geometric and Topological Deep Learning, Probabilistic Deep Learning, Topological Data Analysis, Data Visualization and Geometric Data Processing. I am also interested in the application of these areas to Medical Image Analysis and Transportation Intelligence.

Grants and Awards

1. PI NSF, DMS-2134231, Dec 2021 - Nov 2024 Title: A Unifying Deep Learning Framework Using Cell Complex Neural Networks. Total amount $547,626, PI share : $212,506.

2. University of San Francisco Hardware purchase Grant 2022. Amount $15000.

3. Santa Clara University Summer Research Grant 2022. Amount $16000.

4. Santa Clara University Summer Research Grant 2021. Amount $12000.

5. Santa Clara University Hardware Purchase Grant 2020. Amount $14500.

Publications and Patents

Publications marked with "[**U**]" involve undergraduates. In the publications marked with *, authors are ordered alphabetically. Important paper are highlighted with *.

Book Chapters

(B_1) Reyes, M., Henriques Abreu, P., dos Santos Cardoso, J., Hajij, M., Zamzmi, G., Rahul, P., Thakur, L., *Interpretability of Machine Intelligence in Medical Image Computing, and Topological Data Analysis and Its Applications for Medical Data.* 2021.

(B_2) Reyes, M., Henriques Abreu, P., dos Santos Cardoso, J., Hajij, M., Zamzmi, G., Rahul, P., Thakur, L., *Ethical and Philosophical Issues in Medical Imaging, Multimodal Learning and Fusion Across Scales for Clinical Decision Support, and Topological Data Analysis for Biomedical Imaging.* EPIMI 2022, 12th International Workshop, ML-CDS 2022, 2nd International Workshop, TDA4BiomedicalImaging, Held in Conjunction with MICCAI 2022, Singapore, September, 2022.

Journal Publication

Computational journal publications

(J_3) ALBodour, W., Hanandeh, S., Hajij, M., *A Comparative Study of Soil Liquefaction Assessment Using Machine Learning Models, Geotechnical and Geological Engineering,* 2022.

(J_4) ALBodour, W., Hanandeh, S., Hajij, M., Murad, Y., *Development of Evaluation Framework for the Unconfined Compressive Strength of Soils Based on the Fundamental Soil Parameters Using Gene Expression Programming and Deep Learning Methods, Journal of Materials in Civil Engineering,* 2022.

(J_5) Levitt, J., Hajij, M. and Sazdanovic, R. *Big Data Approaches to Knot Theory: Understanding the Structure of the Jones Polynomial.* Accepted to Knot Theory and Its Ramifications. 2022.

(J_6) Hajij, M. and Levitt, J. *An Efficient Algorithm to Compute the Colored Jones Polynomial.* Accepted to ACM Transactions on Mathematical Software. 2021.

(J_7) * Hajij, M. and Rosen, P. *An Efficient Data Retrieval Parallel Reeb Graph Algorithm.* MDPI Algorithms. 2020.

(J_8) Hajij, M., Jonoska, N., Kukushkin, D. and Saito, M. *Graph Based Analysis for Gene Segment Organization In a Scrambled Genome.* Journal of Theoretical Biology. 2020.

(J_9) Osman, O., Hajij, M., Karbalaieali, S. and Ishak, S., *A Hierarchical Machine Learning Classification Approach for Secondary Task Identification from Observed Driving Behaviour Data, Accident Analysis and Prevention.* 2019.

(J_{10}) * Suh, A., Hajij, M., Wang, B., Scheidegger, C. and Rosen, P. *Persistent Homology Guided Force-Directed Graph Layouts .* IEEE transactions on visualization and computer graphics. 2019.

(J_{11}) Tu, J., Hajij, M. and Rosen, P. *Propagate and Pair: A Single-Pass Approach to Critical Point Pairing in Reeb Graphs.* Lecture Notes in Computer Science. 2019.

(J_{12}) Osman, O., Hajij, M., Peter, R, Ishak, S,. *Prediction of Near-Crashes from Observed Vehicle Kinematics Using Machine Learning, Transportation Research Record: Journal of the Transportation Research Board.* 2019.

(J_{13}) * Rosen, P., Hajij, M., Tu, J., Arafin, T. and Piegl, L. *Inferring Quality in Point Cloud-based 3D Printed Objects using Topological Data Analysis. Computer-Aided Design and Application,* 2019.

(J_{14}) Mohammed, A. and Hajij, M. *Unknotted strand routings of triangulated meshes.* In International Conference on DNA-Based Computers. Springer, 2017.

(J_{15}) * Hajij, M., Dey, T. and Li, X. *Segmenting a surface mesh into pants using Morse theory. Graphical Models.* 2016.

Mathematics publications

(J_{14}) * Ceniceros, J., Elhamdadi, M., Churchill, IR., and Hajij, M., *Singquandles, Psyquandles and Singular Knots: A Survey, Journal of Knot Theory and its Ramifications* 2021.

(J_{15}) * Ceniceros, J., Elhamdadi, M., Churchill, IR., and Hajij, M.,*Cocycle Invariants and Oriented Singular Knots, Mediterranean Journal of Mathematics* 2021.

(J_{16}) * Elhamdadi, M., Hajij, M. and Levitt, J.S. *q-Series and Quantum Spin Networks*. Topology and Analysis. 2020.

(J_{17}) * Elhamdadi, M., Hajij, M. and Istvan, K. *Framed Knots*. Mathematical Intelligencer. 2020.

(J_{18}) * Bataineh, K., Elhamdadi, M. and Hajij, M. *On Rational Knots and Links in the Solid Torus. Mediterranean Journal of Mathematics.* 2018.

(J_{19}) * Elhamdadi, M. and Hajij, M., 2018. *Foundations of the Colored Jones Polynomial of singular knots. Bulletin of the Korean Mathematical Society.* 2018.

(J_{20}) * Elhamdadi, M., Hajij, M. and Saito, M. *Twist regions and coefficients stability of the colored Jones polynomial. Transactions of the American Mathematical Society.* 2018.

(J_{21}) * [**U**] Bataineh, K., Elhamdadi, M., Hajij, M. and Youmans, W. *Generating sets of Reidemeister moves of oriented singular links and quandles. Journal of Knot Theory and Its Ramifications.* 2018.

(J_{22}) * Churchill, I.R., Elhamdadi, M., Hajij, M. and Nelson, S. *Singular knots and involutive quandles. Journal of Knot Theory and Its Ramifications.* 2017.

(J_{23}) * Elhamdadi, M. and Hajij, M., *Pretzel Knots and q-Series. Osaka Journal of Mathematics.* 2017.

(J_{24}) Hajij, M. *The colored Kauffman skein relation and the head and tail of the colored Jones polynomial. Journal of Knot Theory and Its Ramifications.* 2017.

(J_{25}) * Bataineh, K., Elhamdadi, M. and Hajij, M. *The colored Jones polynomial of singular knots. New York J. Math.* 2016.

(J_{26}) Hajij, M. *The tail of a quantum spin network. The Ramanujan Journal.* 2016.

(J_{27}) Hajij, M. *The Bubble skein element and applications. Journal of Knot Theory and Its Ramifications.* 2014.

(J_{28}) * Bataineh, K. and Hajij, M. *Jones's polynomial for links in the handlebody. Rocky Mountain Journal of Mathematics.* 2013.

Conference Publications

(C_{29}) * Hajij, M., Ramamurthy, K., Saenz, A. *High skip networks: A higher order generalization of skip connections,* ICLR Workshop on Geometrical and Topological Representation Learning, 2022.

(C_{30}) * Roddenberry, M., Schaub, M,. Hajij, M., *Signal Processing on Cell Complexes,* ICASSP 2022.

(C_{31}) Hajij, M., Zamzmi, G., Thukar, L., Paul, R,. *Synthetic Medical Image Generation Using Normalizing Flow,* The seventh annual IEEE EMB Strategic Conference on point-of-care technologies (HI-POCT) 2022.

(C_{32}) * Hajij, M., Zamzmi, G., Ramamurthy, K., Saenz, A,. *Data-Centric AI Requires Rethinking Data Notion,* Accepted to Conference on Neural Information Processing Systems (NeurIPS) 2021.

(C_{33}) * Hajij, M., Ramamurthy, K., Saenz, A., Istvan, K. *Topological Deep Learning.* Accepted to Conference on Neural Information Processing Systems (NeurIPS) 2021.

(C_{34}) Hajij, M., Zamzmi, G., Bataineh, F., *Tda-Net: Fusion of persistent homology and deep learning features for covid-19 detection in chest x-ray images, 43rd annual international conference of the IEEE engineering in medicine and biology society,* , 2021.

(C_{35}) Osman, O., Hajij, M., *Development and Comparative Analysis of Advanced Deep Learning Techniques for Crash Prediction in Advanced Driver Support Systems, Transportation Research Record,* 2021.

(C_{36}) Hajij, M., Assiri, B. and Rosen, P., *Parallel Mapper.* Proceedings of the Future Technologies Conference. 2021.

(C_{37}) * Hajij, M., Istvan, Zamzmi, G,. *Cell Complex Neural Networks. Conference on Neural Information Processing Systems (NeurIPS)* , 2020.

(C_{38}) [**U**] Hajij, M., Zhang, Y. Liu, H. and Rosen, P., *Persistent Homology and the Laplacian for Mesh Similarity. EG CGVC.* 2020.

(C_{39}) [**U**] Suh, A., Salgado, C., Hajij, M., and Rosen, P., *TopoLines: Topological Smoothing for Line Charts. EuroVis.* 2020.

(C_{40}) Osman, O., and Hajij, M. *Crash Prediction Based on Vehicle Kinematics Profile Similarity, The 99th annual meeting of the transportation research board.* 2020.

(C_{41}) Osman, O., Hajij, M., Peter, R, and Ishak, S,. *Prediction of Near-Crashes from Observed Vehicle Kinematics Using Machine Learning, The 98th annual meeting of the transportation research board.* 2019.

(C_{42}) Elbagalati, O., and Hajij, M., *A Constrained Spatial Clustering Algorithm for Pavement Management Optimization and Project Prioritization, The 98th annual meeting of the transportation research board.* 2019.

(C_{43}) * Hajij, M., Wang, B., Scheidegger, C. and Rosen, P. *Visual Detection of Structural Changes in Time-Varying Graphs Using Persistent Homology. In Pacific Visualization Symposium (PacificVis).* 2018.

(C_{44}) [**U**] Robles, A., Hajij, M. and Rosen, P. *The shape of an image: A study of mapper on images. International Joint Conference on Computer Vision, Imaging and Computer Graphics Theory and Applications.* 2018.

(C_{45}) Osman, O., Hajij, M., Karbalaieali, S. and Ishak, S. *A Bi-Level Methodology for Identification of Types of Secondary Tasks from Observed Driving Behavior Data: Application of Ensemble Tree Machine Learning Algorithms on SHRP 2 NDS Data*, the 97th annual meeting of the transportation research board. 2018.

(C_{46}) * Osman, O., Hajij, M., Karbalaieali, S. and Ishak, S. *Crash and Near-Crash Prediction from Vehicle Kinematics Data: A SHRP2 Naturalistic Driving Study. The 97th annual meeting of the transportation research board.* 2018.

Short Papers

(S_{47}) * Hajij, M., Said, E., and Todd, R., *Generalized K-means for Metric Space Clustering Using PageRank. The Eurographics Association. 2020.* (Best Short Paper Award.)

(S_{48}) [**U**] Z, Yunhao., Liu, Haowen., Rosen, P., and Hajij, M. *Persistent Homology and the Discrete Laplace Operator For Mesh Similarity. The Eurographics Association.* 2020.

Posters and Abstracts

(P_{48}) * Hajij, M., Zamzmi, G,. and Cai, Xuanting, *Persistent Homology and Graphs Representation Learning*, The second workshop on Learning 3D Representations for Shape and Appearance at The International Conference on Computer Vision (ICCV 2021).

(P_{49}) * Hajij, M., Zamzmi, G., and Istvan, K., *Geometric Message Passing Schemes with Cell Complex Neural Networks*, 5th Workshop on Geometry and Machine Learning, CG Week 2021

(P_{50}) Hajij, M., Said, E., and Todd, R., *PageRank and The K-Means Clustering Algorithm. Shape Modelling International. 2020.*

(P_{51}) Hajij, M., Munch, M., and Rosen, P., *Graph Similarity Using PageRank and Persistent Homology. Algebraic Topology: Methods, Computation, and Science. 2020.*

(P_{52}) [**U**] Z, Yunhao., Liu, Haowen., Rosen, P., and Hajij, M. *Mesh Learning Using Persistent Homology on the Laplacian Eigenfunctions. IGS. 2019.*

(P_{53}) Ciampaglia, G., Licato, J., Rosen, P., Hajij, M., *Visualizing the Evolution of Online Conversation Using Discussion Mapper. In AAAI 2019 Spring Symposium, Towards AI for Collaborative Open Science (TACOS abstract). 2019.*

(P_{54}) [**U**] Suh, A., Salgado, C., Hajij, M., Rosen, P. *TopoLines: Topological Smoothing for Line Charts. IEEE VIS 2018.*

(P_{55}) [**U**] Suh, A., Hajij, M., Wang, B., Scheidegger, C. and Rosen, P., *Driving Interactive Graph Exploration Using 0-Dimensional Persistent Homology Features. IEEE Vis. 2017.*

Under Review

(R_{56}) * Hajij, M., Zamzmi, G., Dawson, M., Muller, G., *Algebraically-Informed Deep Networks (AIDN): A Deep Learning Approach to Represent Algebraic Structures. arXiv preprint arXiv:2012.01141 Under Review 2021.*

(R_{57}) Hajij, M., Zamzmi, G,. and Cai, Xuanting, *Simplicial Complex Representation Learning, under review. 2021.*

(R_{58}) Hajij, M., Wang, B. and Rosen, P. *MOG: Mapper on Graphs for Relationship Preserving Clustering. Under Review. 2021*

Other

(O_{59}) Hajij, M. *Constructing desirable scalar fields for Morse analysis on meshes. 2015.*

(O_{60}) Hajij, M. *Knots, Skein Theory and q-Series. 2015.*

Patents

(R_{61}) Hajij, M., Zamzmi, G., Miolane, N., *Multimodal Cell Complex Networks for Prediction of Drugs' Side Effects Severity and Frequency,* US Patent 63/247008, 2021.

(R_{62}) Hajij, M., Zamzmi, G. *Cell Complex Neural Networks for 3D Object Recognition and Segmentation from Point Cloud Data* US PATENT 63/247063, 2021.

Conference and Workshop Organization

- MICCAI 2022: <u>Topological Data Analysis and its Applications for Biomedical Imaging</u>, organizer chair.

- MICCAI 2021: <u>Topological Data Analysis and its Applications for Medical Data</u>, organizer chair.

- CAIHA 2020 : 1st Workshop on Computational and Affective Intelligence in Healthcare Applications - Vulnerable Populations, technical committee.

Teaching

I have taught subjects related to Computer Science, Data Science and Mathematics. Some of these courses are listed below.

Courses taught at University of San Francisco:

Data Acquisition, Fall 2022, *Algorithms and Data Structures* Spring 2023, *Deep Learning* Summer 2023

Courses taught at Santa Clara University:

Advanced Probability and Statistics I and II, Winter 2021, Spring 2021.

Courses taught at KLA Corporation:

An Introduction to Machine Learning, the course was given between December 2019 and Aug 2020.

Courses taught at Ohio State University:

Advanced Algorithms and Data Structures, Fall 2018, Spring 2019.

Courses taught at University of South Florida:

Geometric Machine Learning Algorithms, Spring 2018, <u>Slides</u> are provided publicly.

Applied Topology and Data Analysis, Fall 2016.

Geometric Data Processing Algorithms, Spring 2016. <u>Slides</u> are provided publicly.

Calculus III, Spring 2017.

Business Calculus, Summer 2016.

Linear Algebra, Fall 2015.

Interdisciplinary Course Design Experience

I designed new syllabi and wrote the materials for multiple interdisciplinary courses:

- *Deep Learning.*

- *Geometric Machine Learning Algorithms.* <u>Slides</u> are provided publicly.

- *An Introduction to Machine Learning.*

- *Applied Topology and Data Analysis.*

- *Geometric Processing Algorithms.* <u>Slides</u> are provided publicly.

Advising

Graduate Students

- Ibrahim Aljabea (Mathematics, LSU), co-advising, 2021-Now.

- Soham Mukherjee (Computer Science, OSU), co-advising, 2018-2019.

Undergraduate Students

- Neha Annamalai and Swathi Arvind (Mathematics and Computer Science, SCU), 2020-2022.

- Yunhao Zhang and Haowen Liu (Computer Science, OSU), Mesh Learning Using Persistent Homology on the Laplacian Eigenfunctions, 2019.

- Ashley Suh (Computer Science, USF), Driving Interactive Graph Exploration Using 0-Dimensional Persistent Homology Features, 2019. co-advising.

- Alejandro Robles (Electrical Engineering, USF), Mapper on Images, 2018.

- William Youmans (Mathematics, USF), Generating sets of Reidemeister moves of oriented singular links and Quandles, 2018.

- Jennifer Cuartas (Mathematics, USF), Polynomial Invariants in Knot Theory, Honor Thesis 2017.

Software and Code

1. TopoNetX. is similar to NetworkX, a popular Python graph package, and extends its capabilities to support a wider range of network structures, including cell complexes, simplicial complexes and combinatorial complexes.

2. TopoModelX: A Python package to for Higher Order Deep Models For Python.

3. Algebraically Informed Deep Nets. A deep learning framework to train a collection of neural network to solve a system of algebraic equations.

4. Generalized K-means on Graphs Using PageRank. An implementation of the our paper titled with the same name using sklearn-type API.

5. MapperOnGraphs. An interactive software of the our paper Mapper on Graphs that can be utilized to visualise the mapper graph interactively while constructing its cover.

Invited Talks and Presentations
Seminars and Colloquium Talks

1. The Data Institute, DSCO 2023, An introduction to graph neural networks and their generalizations, San Francisco, 2023.

2. The Data Institute, DSCO 2023, What is Topological Deep Learning?, San Francisco, 2023.

3. Topological Deep Learning, going beyond graph data, IBM Thomas J Watson Research Center, NewYork 2022.

4. HONS 2023 (Keynote), A unifying deep learning framework with higher order attention networks, 2022.

5. Somana University, CS seminars, UNIFYING PRINCIPLES OF HIGHER ORDER NETWORKS, 2022.

6. Applied Geometry for Data Sciences Mathematical AI for Molecular Sciences, A unifying deep learning framework with higher order attention networks, 2022.

7. SoCG gathering, the 5th Workshop on Geometry and Machine Learning, Virtual Seminar, Geometric Message Passing Schemes with Cell Complex Neural Networks, 2021.

8. Georgia Institute of Technology, Mini-symposium: "Algebra, Combinatorics, and Topology in Modern Biology, Tda-Net: Fusion of persistent homology and deep learning features for covid-19 detection in chest x-ray images, 2021.

9. University of Michigan, Virtual Seminar, Algebraically-Informed Deep Networks (AIDN): A Deep Learning Approach to Represent Algebraic Structures, 2021.

10. KLA Corporation, Topological Data Analysis and its Applications in Supervised Machine Learning, September, 2019.

11. Swarthmore College, Topological Signatures of Graphs, March. 2019.

12. Harvard Medical School, Visual Detection of structural changes in Time-Varying Graphs using Persistent Homology. February 2019.

13. Ohio State University, Topological Data Analysis for Machine Learning, Nov. 2018.

14. University of South Florida, An introduction to persistence homology, (Colloquium Talk) Apr. 2017.

15. University of South Florida, Tampa, An introduction to topological data analysis, Apr. 2017.

16. University of South Florida, Tampa, Graph-based clustering algorithms, March. 2017.

17. University of South Florida, Tampa, A pants decomposition algorithm for triangulated surfaces, Oct. 2016.

18. University of South Florida, Tampa, Morse Theory and its applications in geometric processing, Sep. 2016.

19. University of Central Florida, Orlando, Knots, hyperbolic geometry and q-series, Feb. 2016.

20. Tulane University, New Orleans, Quantum invariants and q-series, (Colloquium Talk) Sep. 2014.

21. University of South Florida, Tampa, Recent development in quantum invariants, (Colloquium Talk) Sep. 2014.

22. LSU virtual Seminar, Louisiana State University, Baton Rouge, Skein theory and q-series, Apr. 2014.

Invited Talks and Presentations

1. Joint Mathematical Meeting , Denver, Colorado. Manifold Learning Using Persistent Homology on the Laplacian Eigenfunctions, January 2020.

2. AMS Sectional Meeting, Auburn, Alabama. Visual Detection of Structural Changes in Time-Varying Graphs Using Persistent Homology, March 2019.

3. The 97th Annual Meeting of the Transportation Research Board, Crash and Near-Crash Prediction from Vehicle Kinematics Data: A SHRP2 Naturalistic Driving Study, January 2018.

4. The 97th Annual Meeting of the Transportation Research Board, A Bi-Level Methodology for Identification of Types of Secondary Task from Observed Driving Behavior Data: Application of Ensemble Tree Machine Learning Algorithms on SHRP2 NDS Data, January 2018.

5. Joint Mathematics Meetings, Twist Regions and Coefficients Stability of the Colored Jones Polynomial, San Diego, California, January 2018.

6. AMS Sectional Meeting, University of Central Florida, Orlando, Graph Based Analysis for Gene Segment Interactions In a Scrambled Genome, October 2017.

7. Knots in Washington, Twist Regions and Coefficients Stability of the Colored Jones Polynomial, December 2016.

8. AMS Sectional Meeting, Special Session on Algebraic Structures in Knot Theory, A one variable generalization of the Kauffman and Vogel polynomial, March 2016.

9. Fall Eastern Sectional Meeting, Rutgers University, Special Session on Invariants of Knots, Links and 3-Manifolds, Pretzel Links and q-Series, Nov 2015.

10. Central Fall Sectional Meeting, Loyola University, Chicago, q-Series Identities From Pretzel Links, Oct 2015.

11. Graduate Student Conference in Algebra, Geometry, and Topology, Temple University, Philadelphia, Quantum Invariants and q-Series, May 2015.

12. Joint Mathematics Meetings, San Antonio, Texas, Skein theory and q-series, Jan. 2015.

13. Conference on Knot Theory and Its Applications to Physics and Quantum Computing, University Of Texas at Dallas, Some properties of the tail of the colored Jones polynomial, Jan. 2015.

14. The Thin Manifold, University of Iowa, Iowa City, Skein Theory and q-Series, Aug. 2014.

15. AMS Sectional Meeting, AMS Special Session on Geometric Topology and Number Theory, University of Tennessee, Knoxville, The tail of quantum spin networks and Andrews-Gordon identities, Mar. 2014.

16. AMS Sectional Meeting, AMS Special Session on Geometric Topology, University of Tennessee, Knoxville, The colored Kauffman skein relation and the tail of the colored Jones polynomial, Mar. 2014.

17. Knots in Washington, George Washington University, The colored Kauffman skein relation and the tail of the colored Jones polynomial, Jan. 2014.

18. Special Session on Algebraic Structures Motivated by Knot Theory AMS-MAA Joint Mathematics Meetings, Baltimore, MD, Skein theory and Andrews-Gordon identities for the false theta functions, Jan. 2014.

19. AMS Sectional Meeting, AMS Special Session, Fall Central Sectional Meeting Washington University, St. Louis, Andrews-Gordon identities via the tail of the colored Jones polynomial, Oct. 2013.

20. AMS Sectional Meeting, AMS Special Session, Temple University, Philadelphia, The tail of a quantum spin network and Andrews-Gordon identities, Oct. 2013.

Services

Professional-Peer Review

- International Conference on Learning Representations 2021, 2022, 2023.

- Conference on Neural Information Processing Systems 2020,2021,2022, 2023.

- IEEE International Conference on Big Data 2021.

- IEEE Transactions on Visualization and Computer Graphics.

- IEEE Transactions on Neural Networks and Learning Systems.

- Transactions on Pattern Analysis and Machine Intelligence.

- International Journal of Imaging Systems and Technology.

- Transactions of the American Mathematical Society.

- Mathematical and Computational Applications.

- Quantum Topology.

- Proceedings of the American Mathematical Society.

- NewYork Journal of Mathematics.

- EuroVis 2018, 2019, 2020.

- Open Mathematics - De Gruyter.

- Graphical Models.

- MDPI Algorithms.

- MDPI Mathematics.

- MDPI Symmetry.

- Journal of Knot Theory and its Ramifications.

References

Available upon request.