Luyining (Elaine) Gan

Contact Information

Postdoctoral Scholar
Department of Mathematical Sciences
University of Nevada, Reno
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Interests

Linear Algebra, Matrix Analysis, Differential Geometry, Machine Learning.

Education

Ph.D. in Mathematics (GPA 4.0/4.0) Aug. 2015 - Jan. 2020
Auburn University, Auburn, AL
Dissertation: Differential geometry on matrix groups.
Advisor: Prof. Tin-Yau Tam and Prof. Ming Liao

M.S. in Statistics (GPA 4.0/4.0) Aug. 2017 - May 2019
Auburn University, Auburn, AL
Project: A comparison study for Lasso problem: ADMM, AMP and SNA algorithms.
Advisor: Dr. Peng Zeng

B.S. in Applied Mathematics (GPA 3.5/4.0) Sept. 2011 - Jun. 2015
Jiangxi Normal University, Jiangxi, China

Publications & Pre-prints

L. Gan, T.-Y. Tam, *Inequalities and limits of weighted spectral geometric mean,* submitted (Aug. 2021), arXiv preprint.

L. Gan, J. Han, L. Sun, G. Wang, *Large $Y_{k,b}$-tilings and hamilton ℓ-cycles in k-uniform hypergraphs,* submitted (Aug. 2021), arXiv preprint.

L. Gan, X. Liu, T.-Y. Tam, *On two geometric means and sum of adjoint orbits,* accepted by Linear Algebra and its Applications (Aug. 2021), arXiv preprint.

L. Gan, W. Gao, J. Han, *Zero-nonzero tree patterns that allow $\mathbb{S}_n^*$,* submitted (Sept. 2020).

L. Gan, J. Han, *Hamiltonicity in Cherry-quasirandom 3-graphs,* submitted (Sept. 2020), arXiv preprint.

L. Gan, M. Liao, T.-Y. Tam, *Curvature of matrix and reductive Lie groups,* Journal of Lie Theory, 30 (2020), No. 2, 361-370.

X. Gong, **L. Gan**, Z. Wu, *Adaptive impulsive cluster synchronization in community network with nonidentical nodes,* International Journal of Modern Physics C, 2016, 27(1): 1650010.

L. Gan, Z. Wu, X. Gong, *Cluster synchronization of community network with nonidentical nodes via intermittent pinning control,* Chinese Physics B, 2015, 24(4): 040503.

Conferences Talks

Invited Talk, *Inequalities of geometric and spectral means*, Joint Mathematics Meetings, Seattle. (Jan. 5–8, 2021)

Invited Talk, *Extensions of Horn-Steinberg's theorem on the eigenvalues of square*

matrix and its unitary part, SIAM Conference on Applied Linear, Virtual. (May 17–21, 2021)

Contributed Talk, *Differential geometry on matrix groups*, 2020 Joint Mathematics Meetings, Denver, Colorado, USA. (Jan. 15–18, 2020)

Seminar Talk, *Curvature of matrix and reductive Lie groups*, University of Nevada Reno, Reno, Nevada, USA. (Dec. 17, 2019)

Invited Talk, *Differential geometry on matrix groups*, 8^{th} International Conference on Matrix Analysis and Application, University of Nevada Reno, Reno, Nevada, USA. (July 15–18, 2019)

Conferences Organizer

Organizing committee member, *ILAS special sessions on Matrix Analysis and Applications I and II*, Joint Mathematics Meetings, Seattle (Jan. 5–8, 2021).

Organizing committee member, *Matrix seminar*, University of Nevada Reno (Fall 2021).

Other Conferences Attended

The 14^{th} Workshop on Numerical Ranges and Numerical Radii, Technical University of Munich Garching, Munich, Germany. (Jun. 13-18, 2018)

Southern Regional Algebra Conference, Auburn University at Montgomery, Alabama, USA. (Apr. 20-22, 2018)

Langenhop Lecture and SIU Mathematics Conference, Southern Illinois University Carbondale, Illinois, USA. (May 15-16, 2017)

Southern Regional Algebra Conference, University of South Alabama, Alabama, USA. (Mar. 17-19, 2017)

Joint Mathematics Meetings, Atlanta, Georgia, USA. (Jan. 4-7, 2017)

Southern Regional Algebra Conference, Auburn University, Alabama, USA. (Mar. 18-20, 2016)

Recent Advances in Linear Algebra and Graph Theory, University of Tennessee at Chattanooga, Tennessee, USA. (Mar. 5-6, 2016)

The 5^{th} International Conference on Matrix Analysis and Application, Nova Southeastern University, Florida, USA. (Dec. 17-20, 2015)

International Workshop on Matrices and Operators, Shaanxi Normal University, Shaanxi, China. (Jul. 19-21, 2015)

International Workshop on Matrix Inequalities and Matrix Equations, Shanghai University, Shanghai, China. (Jun. 28-30, 2015)

Research Experience

Finding Needles in Haystacks: Approaches to Inverse Problems using Combinatorics and Linear Algebra, Mathematics Research Communities. (Summer School 2021)

Finding Needles in Haystacks: Approaches to Inverse Problems using Combinatorics and Linear Algebra, Mathematics Research Communities. (Summer School 2020)

Teaching Experience

Spring	2020	STATs Lab
Spring	2020	Statistics for Biological and Health Science
Fall	2019	Pre-calculus Algebra
Fall	2019	Statistics for Biological and Health Science
Summer	2019	Calculus I
Spring	2019	Calculus II
Fall	2018	College Algebra
Summer	2018	Precalculus: Trigonometry (Online)
Spring	2018	Calculus II
Fall	2017	Calculus III
Summer	2017	Linear Algebra
Spring	2017	Calculus I
Fall	2016	Calculus I
Spring	2016	Grader
Fall	2015	Grader

Honors and Awards

International Student Recognition Banquet Award, Auburn University. (Apr. 2020)
Dean's Research Award, Auburn University. (Mar. 2020)
AMS Graduate Student Travel Grant to 2020 JMM. (Jan. 2020)
Excellence in Research, Auburn University. (Dec. 2019)
Don and Sandy Logan Fellowship, Auburn University. (Dec. 2019)
Graduate Research and Travel Fellowship, Auburn University. (Nov. 2019)
Graduate Research and Travel Fellowship, Auburn University. (May 2019)
Dr. J. Earl Perry Endowed Summer Graduate Award, Auburn University. (Jun. 2018)
Don and Sandy Logan Fellowship, Auburn University. (Dec. 2017)
David and Valerie Endowed Fund for Excellence, Auburn University. (May 2017)
Top Ten University Student Award, Jiangxi Normal University. (Jan. 2015)
National Scholarship, China. (Oct. 2014)
Honorable Mention in Mathematical Contest in Modeling, USA. (Feb. 2014)

Computer Skills

Python, Matlab, R, SAS, SQL.

Memberships

American Mathematical Society (AMS)
International Linear Algebra Society (ILAS)
Nevada Chapter of the American Statistical Association (NV-ASA)

References

Tin-Yau Tam, Department Chair & Professor, Department of Mathematics and Statistics, University of Nevada Reno, `ttam@unr.edu`.

Ming Liao, Professor, Department of Mathematics and Statistics, Auburn University, `liaomin@auburn.edu`.

Georg Hetzer, Professor, Department of Mathematics and Statistics, Auburn University, `hetzege@auburn.edu`.

Peng Zeng, Associate Professor, Department of Mathematics and Statistics, Auburn University, `zengpen@auburn.edu`.

Bertram Zinner, Associate Professor, Department of Mathematics and Statistics, Auburn University, `zinnebe@auburn.edu`.