

# LUYINING (ELAINE) GAN

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CONTACT INFORMATION	Postdoctoral Scholar Department of Mathematical Sciences University of Nevada, Reno Email: <a href="mailto:lgan@unr.edu">lgan@unr.edu</a>	
INTERESTS	Linear Algebra, Matrix Analysis, Differential Geometry, Machine Learning.	
EDUCATION	<b>Ph.D. in Mathematics</b> (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	
	<b>M.S. in Statistics</b> (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	
PUBLICATIONS & PRE-PRINTS	<b>B.S. in Applied Mathematics</b> (GPA 3.5/4.0)	Sept. 2011 – Jun. 2015
	Jiangxi Normal University, Jiangxi, China	
	<b>L. Gan</b> , T.-Y. Tam, <i>Inequalities and limits of weighted spectral geometric mean</i> , submitted (Aug. 2021), arXiv preprint.	
	<b>L. Gan</b> , J. Han, L. Sun, G. Wang, <i>Large <math>Y_{k,b}</math>-tilings and hamilton <math>\ell</math>-cycles in <math>k</math>-uniform hypergraphs</i> , submitted (Aug. 2021), arXiv preprint.	
	<b>L. Gan</b> , W. Gao, J. Han, <i>Zero-nonzero tree patterns that allow <math>S_n^*</math></i> , submitted (Sept. 2020).	
	<b>L. Gan</b> , J. Han, <i>Hamiltonicity in Cherry-quasirandom 3-graphs</i> , submitted (Sept. 2020), arXiv preprint.	
	<b>L. Gan</b> , X. Liu, T.-Y. Tam, <i>On two geometric means and sum of adjoint orbits</i> , Linear Algebra and its Applications, 631(2021), 156–173.	
	<b>L. Gan</b> , M. Liao, T.-Y. Tam, <i>Curvature of matrix and reductive Lie groups</i> , Journal of Lie Theory, 30 (2020), No. 2, 361–370.	
	X. Gong, <b>L. Gan</b> , Z. Wu, <i>Adaptive impulsive cluster synchronization in community network with nonidentical nodes</i> , International Journal of Modern Physics C, 2016, 27(1): 1650010.	
	<b>L. Gan</b> , Z. Wu, X. Gong, <i>Cluster synchronization of community network with nonidentical nodes via intermittent pinning control</i> , Chinese Physics B, 2015, 24(4): 040503.	
CONFERENCES TALKS	<b>Invited Talk</b> , <i>Metric and spectral geometric means of positive definite matrices</i> , Joint Mathematics Meetings, Seattle. (Jan. 5–8, 2022)	
	<b>Invited Talk</b> , <i>Extensions of Horn-Steinberg's theorem on the eigenvalues of square matrix and its unitary part</i> , SIAM Conference on Applied Linear Algebra, 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<sup>th</sup> 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<sup>th</sup> 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<sup>th</sup> 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)		
COMPUTER SKILLS	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)		
MEMBERSHIPS	Python, Matlab, R, SAS, SQL.		
	American Mathematical Society (AMS)		
	International Linear Algebra Society (ILAS)		
	Nevada Chapter of the American Statistical Association (NV-ASA)		