Vahan Huroyan

Contact Information

Department of Mathematics
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Research Interests

Mathematical Data Analysis, Machine Learning, Computer Vision, Distributed Computing, Probability Theory.

Present Occupation

The University of Arizona, Department of Mathematics, *August 2018 to Present*
Postdoctoral Research Associate

Education

Ph.D. in Mathematics, 2012 -2018, University of Minnesota, Minneapolis, MN
Adviser: Gilad Lerman

Masters in Mathematics, 2016, University of Minnesota, Minneapolis, MN
Adviser: Gilad Lerman

B.S. in Mathematics , 2008-2012, Yerevan State University, Yerevan, Armenia

Exchange Fellow, 2010-2011, Mathematics, University of Minnesota, Minneapolis MN.

Grants, Awards and Honors

SIAM Student Travel Award to attend the 2016 SIAM Annual Meeting (AN16), MS, July 2016

Graduate Research Fellow at SAMSI (Statistical and Applied Mathematical Sciences Institute), NC, September 2013- May 2014

Recipient of the highly competitive Global Undergraduate Exchange Fellowship, U.S. State Department

International Math Olympiad 2008 in Madrid, Spain - *Honorable Mention.*

International Zhautykov Olympiad, Mathematics January, 2008 in Almaty, Kazakhstan - *Bronze Medal.*

International Math Online Ariel Olympiad 2010 (Israel/Russia) - *Silver Medal.*

Putnam Math Competition North America 2011 - *top 10%*

Professional Experience

MERL Mitsubishi Research Electric Lab, May 2016 - August 2016
Internship, host: Hassan Mansour

Instigate Parallel System development, August 2011 - August 2012
Mobile developer (Android/iOS)

Teaching Experience

The University of Arizona
2019 Spring MATH 310 - *Applied Linear Algebra, Instructor*

University of Minnesota

	2018 Spring	Math 3283W - *Sequences, Series, and Foundations: Writing Intensive , Teaching Assistant*
	2017 Fall	Math 3283W - *Sequences, Series, and Foundations: Writing Intensive , Teaching Assistant*
	2016 Spring	Math 3283W - *Sequences, Series, and Foundations: Writing Intensive , Teaching Assistant*
	2014 Summer	Math 2243 - *Linear Algebra and Differential Equations, Instructor*
	2013 Spring	Math 1272 - *Calculus 2, Teaching Assistant*
	2012 Fall	Math 1271 - *Calculus 1, Teaching Assistant*
	Physmath high school after A. Shahinyan at Yerevan State University, Yerevan, Armenia,	
	2012 Spring	High school *Geometry/Algebra, Teaching Assistant*

Additional Training

July 20-August 07, 2015 — *Summer Graduate School in Modern Harmonic Analysis and Applications, University of Maryland,*

Invited Talks, Presentations, Posters

2018 October — TRIPODS Seminars, The University of Arizona, Tucson, AZ
Title: Jigsaw Puzzles and Graph Connection Laplacian

2018 May — 7th International Conference on Computational Harmonic Analysis in conjunction with the 33rd annual Shanks Lecture, Vanderbilt University, Nashville, TN
Title: Jigsaw Puzzles and Graph Connection Laplacian

2018 February — Information Theory and Applications (ITA) Workshop, Graduation Day, San Diego, CA
Title: Jigsaw Puzzles and Graph Connection Laplacian

2017 December — SIAM Conference on Analysis of Partial Differential Equations (PD17), Baltimore, MA
Title: Jigsaw Puzzles and Graph Connection Laplacian

2017 June — Midwest Machine Learning Symposium (MMLS), Chicago, IL
Title: Distributed Robust Subspace Recovery

2017 February — Information Theory and Applications (ITA) Workshop, Graduation Day, San Diego, CA
Title: Distributed Robust Subspace Recovery

2016 July — SIAM Annual Meeting, Minisymposium on LOBPCG and related methods, Boston, MA
Title: Distributed Principal Component Analysis and Distributed Robust Subspace Recovery

Journal Publications

V. Huroyan, G. Lerman "*Distributed Robust Subspace Recovery and Distribtuted Principal Component Analysis*" SIAM Journal on Scientific Computing (SISC) 40(5):A3067-A3090, 2018.

Conference Publications

H. Mansour, V. Huroyan, M. Benosman, "*Crowd Flow Completion From Partial Spatial Observations Using Kernel Dynamic Mode Decomposition*", Sampling Theory and Applications (SAMPTA), 12th International Conference, July 3 - 7, 2017, Tallinn, Estonia.

M. Benosman, H. Mansour, V. Huroyan, "*Koopman-operator Observer-based Estimation of Pedestrian Crowd Flows*", The 20th World Congress of the International Federation of Automatic Control (IFAC), 9-14 July 2017, Toulouse, France.

Work under Review

Solving Jigsaw Puzzles By The Graph Connection Laplacian
with Hau-tieng Wu and Gilad Lerman.

Same Stats, Different Graphs (Graph Statistics and Why We Need Graph Drawings)
with Hang Chen, Utkarsh Soni, Yafeng Lu, Ross Maciejewski and Stephen Kobourov

Work in Progress

Non-convex Analysis of Multi-Graph Matching
with Gilad Lerman and Deepti Pachauri.

Review Experience

Reviewer for NIPS 2015 and NIPS 2016 conference papers

Computer Skills

- Matlab
- C++
- Objective C
- Java
- Android SDK
- R
- LaTeX
- SQL

Language Skills

- *Armenian* (mother tongue)
- *English* (native fluency)
- *Russian* (fluent)