Keivan Hassani Monfared – CV

Contact Website: k1monfared.github.io Mailing address: Information Linkedin: linkedin.com/in/k1monfared Department of Mathematics GitHub: github.com/k1monfared and Statistics Email: k1monfared@gmail.com University of Calgary **Phone:** +1-587-832-1785 2500 University Drive NW Calgary AB T2N 1N4 Canada STATUS IN Permanent Resident Canada Research Linear Algebra: Combinatorial Matrix Theory Interests Discrete Mathematics: Algebraic Graph Theory and their Applications in Neuroscience and Economics EDUCATION **Ph.D.**, Mathematics August 2014 University of Wyoming, Laramie, WY, USA Thesis: The Jacobian Method: The art of finding more needles in nearby haystacks Advisor: Bryan L. Shader Master of Science, Mathematics December 2011 University of Wyoming, Laramie, WY, USA Thesis: On the Permanent Rank of Matrices Advisor: Bryan L. Shader Bachelor of Science, Mathematics and Computer Science July 2009 Amirkabir University of Technology (Tehran Polytechnic), Tehran, Iran Thesis: On the Existence of Nowhere-Zero Vectors for Linear Transformations Advisor: Dariush Kiani Professional PIMS Postdoctoral Fellow and Sessional Instructor 2017-Present EXPERIENCE University of Calgary, Calgary, AB, Canada Postdoctoral Fellow and Sessional Instructor 2015-2017 University of Calgary, Calgary, AB, Canada Visiting Assistant Professor 2014-2015 Western Illinois University, Macomb, IL, USA Graduate Teaching and Research Assistant 2009-2014 University of Wyoming, Laramie, WY, USA Undergraduate Research Assistant 2008-2009 Institute for Research in Fundamental Sciences (IPM), Tehran, Iran Teaching **Teaching Certificates** EXPERIENCE • Instructional Skills Workshop Certificate August 2016 Taylor Institute for Teaching and Learning, University of Calgary • Course Design Certificate October 2017 Taylor Institute for Teaching and Learning, University of Calgary Graduate Courses • (Online Course) Discrete Mathematics^{1,2,4} Summer 2012 for high school teachers **Undergraduate Courses** • Linear Algebra¹⁻³ 2011, 2014, 2016, 2017, 2018 • Calculus I^{1-3} 2012, 2015, 2016, 2017

¹Designing the course theme, producing presentations for lectures, writing and delivering lectures, devising study guides, creating and maintaining a class web site, managing instructional resources. Writing and grading exams and assignments, holding regular office hours, mentoring and advising students.

²Handling all administrative aspects of the course.

³Creating the syllabus

their application to AHP Mojtabe Eslami and Keivan Hassani Monfared In Progress. Dissonance networks and social influence Omid Atabati, Mojtaba Eslami, and Keivan Hassani Monfared In Progress. Community structure detection and evaluation during preictal and postictal hippocampal depth recordings Keivan Hassani Monfared, Kris Vasudevan, Jordan. S. Farrell, and G. Cam Teskey Under Review. Inverse spectral problems for linked vibrating systems and structured matrix polynomials Keivan Hassani Monfared and Peter Lancaster Under review. An analog of Matrix Tree Theorem for signless Laplacians Keivan Hassani Monfared and Sudipta Mallik Linear Algebra and Its Applications. 560 43-55 A structured inverse spectrum problem for infinite graphs Keivan Hassani Monfared and Ebssan Khamohammadi Linear Algebra and Its Applications. 539 28-43 Existence of a not necessarily symmetric matrix with given distinct eigenvalues and graph Keivan Hassani Monfared Linear Algebra and Its Applications. 527 1-11 The nowhere-zero eigenbasis problem for a graph Keivan Hassani Monfared Linear Algebra and Its Applications. 505 296-312 On the principal permanent rank characteristic sequences of graphs and digraphs Keivan Hassani Monfared and Bryan L. Shader Linear Algebra and Its Applications. 505 296-312 On the principal permanent rank characteristic sequences of graphs and digraphs Keivan Hassani Monfared and Sudipta Mallik Linear Algebra and Its Applications. 496 407-419 The A-7 structured inverse eigenvalue problem Keivan Hassani Monfared and Bryan L. Shader Linear and Multilinear Algebra. 63 2275-2300 Construction of real skew-symmetric matrices from interlaced spectral data, and graph Keivan Hassani Monfared and Bryan L. Shader Linear and Multilinear Algebra. 63 2275-2300 Construction of real skew-symmetric matrices from interlaced spectral data, and graph Keivan Hassani Monfared and Sudipta Mallik Linear Algebra and Its Applications. 471 241-263	 Discrete Mathematics^{1,4} General Statistics^{1,2} Concepts of Mathematics^{1,2} Geometry and Measurement^{1,2,4} for elementary school teachers Calculus III¹⁻³ Algebra and Trigonometry ^{1,2} Calculus II^{1,2} Finite Mathematics^{1,2} Trigonometry^{1,2} College Algebra^{1,2} 	$\begin{array}{c} 2017 \\ 2015 \ 2014 \\ 2014 \\ 2014 \\ \end{array}$ $\begin{array}{c} 2013 \\ 2011, \ 2013 \\ 2012 \\ 2010, \ 2011 \\ 2009, \ 2010 \\ 2010 \\ \end{array}$
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sequences of graphs and digraphs2016Keivan Hassani Monfared, Paul Horn, Franklin H. J. Kenter, Kathleen Nowak, John Sinkovic, and Josh Tobin Electronic Journal of Linear Algebra. 31 187–1992016Spectral characterization of matchings in graphs Keivan Hassani Monfared and Sudipta Mallik Linear Algebra and Its Applications. 496 407–4192015The λ-τ structured inverse eigenvalue problem Keivan Hassani Monfared and Bryan L. Shader Linear and Multilinear Algebra. 63 2275–23002015Construction of real skew-symmetric matrices from interlaced spectral data, and graph Keivan Hassani Monfared and Sudipta Mallik2015	The nowhere-zero eigenbasis problem for a graph Keivan Hassani Monfared and Bryan L. Shader	2016
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Keivan Hassani Monfared and Bryan L. Shader Linear and Multilinear Algebra. 63 2275–2300 Construction of real skew-symmetric matrices from interlaced spectral data, and graph Keivan Hassani Monfared and Sudipta Mallik	Keivan Hassani Monfared and Sudipta Mallik	2016
from interlaced spectral data, and graph Keivan Hassani Monfared and Sudipta Mallik	The λ - τ structured inverse eigenvalue problem Keivan Hassani Monfared and Bryan L. Shader Linear and Multilinear Algebra. 63 2275–2300	2015
⁴ Mentoring teaching assistants. Leading a discussion session.	from interlaced spectral data, and graph Keivan Hassani Monfared and Sudipta Mallik Linear Algebra and Its Applications. 471 241–263	2015

 $^{^4\}mathrm{Mentoring}$ teaching assistants. Leading a discussion session.

Publications

	Construction of matrices with a given graph and prescribed interlaced spectral data Keivan Hassani Monfared and Bryan L. Shader Linear Algebra and Its Applications. 438 4348–4358	2013
	On the existence of nowhere-zero vectors for linear transforma Saeed Akbari, Keivan Hassani Monfared, Mohammad Jamaali, Ehss Khanmohammadi, and Dariush Kiani Bulletin of the Australian Mathematical Society. 82 480–487	
HONOURS AND	Distinguished Awards	
AWARDS	PIMS postdoctoral fellowship Award University of Calgary Pacific Institute for the Mathematical Sciences, Calgary, AB, Canada	2017
	Teaching Award for Sessional Instructors (Nominated) University of Calgary	2016
	Outstanding contributions to student learning, Calgary, AB, Canada	2010
	Graduate School Scholarship University of Wyoming	2012-2014
	Includes full tuition for doctorate program and stipend, Laramie, WY	
	Virinidra and Gail Sehgal Award University of Wyoming Excellence in Mathematics, Laramie, WY, USA	Spring 2012
	Ms. Catherine A. Shaw Award University of Wyoming Excellence in Mathematics, Laramie, WY, USA	Spring 2012
	Graduate School Scholarship University of Wyoming Includes full tuition for masters program and stipend, Laramie, WY,	2009–2011 USA
	Bronze Medal Iranian Mathematical Society 31 st Nationwide Mathematics Competitions for University students, N	May 2007
	Travel Scholarships	
	Fields Institute Fields Medal Symposium, Toronto, ON, Canada	October 2017
	American Mathematical Society (AMS) Joint Mathematics Meeting, San Antonio, TX, USA	January 2015
	Institute of Mathematics and its Applications (IMA) IMA Workshop: Probabilistic and Extremal Combinatorics, Minneap	September 2014 olis, MN, USA
	American Mathematical Society (AMS-MRC)	June 2014
	Mathematics Research Communities, Algebraic and Geometric Method Mathematics, Sundance, UT, USA	s in Applied Discrete
	Society of Industrial and Applied Mathematics (SIAM) Conference on Discrete Mathematics, Minneapolis, MN, USA	June 2014
	NSF-CBMS Regional Research Conference Workshop on zeta functions on graphs, Snowbird, UT, USA	May 2014
	University of Wyoming Graduate School MathFest 2013, Hartford, CT, USA	August 2013
	University of Wyoming Mathematics Department MathFest 2013, Hartford, CT, USA	August 2013
	University of Illinois at Urbana-Champaign Graduate Students Combinatorics Conference, Urbana, IL, USA	April 2012
	Paul Stock Foundation Joint Mathematics Meeting 2012, Boston, MA, USA	January 2012
	University of Wyoming Graduate School Joint Mathematics Meeting 2012, Boston, MA, USA	January 2012
	University of Wyoming Mathematics Department Joint Mathematics Meeting 2012, Boston, MA, USA	January 2012

Seminars and Talks Invited Talks

invited Talks	
Counting to infinity	July 2017
High School Math Camp at University of Calgary, Calgary, AB, Canada Counting from one	July 2017
High School Math Camp at University of Calgary, Calgary, AB, Canada Real life applications of calculus and linear algebra	November 2016
Student Colloquium, University of Calgary, Calgary, AB, Canada	
Using jacobian method to solve inverse eigenvalue	Il., 201 <i>6</i>
problems for graphs International Linear Algebra Society (ILAS 16), Leuven, Belgium	July 2016
Touching infinity	June 2016
Junior Math Contestants, University of Calgary, Calgary, AB, Canada	
Permanent ranks of matrices and generalized cycles of graphs 47th Southeastern International Conference on Combinatorics, Graph Theory & Computing, Boca Raton, FL, USA	March 2016
On the principal permanent rank characteristic	
sequences of graphs	January 2016
Joint Mathematics Meeting 2016 (JMM 16), Seattle, WA, USA Several examples on the jacobian method	June 2015
Canadian Discrete and Algorithmic Mathematics Conference (CanaDAM 15), Saskatoon, SK, Canada	June 2019
The inverse principal perrank characteristic sequence problems Rocky Mountain-Great Plains Graduate Research Workshop in Combinatorics (GRWC 15), Denver, CO, USA	August 2014
Using the jacobian method in structured inverse	
eigenvalue problems	November 2013
University of Colorado, Denver, CO, USA On mathematics education	June 2008
Parviz Shahriari Scientific and Cultural Foundation, Tehran, Iran	June 2008
Contributed Talks	
Graph partitioning problems arising in neuroscience Prairie Discrete Mathematics Workshop(PDMW18), Brandon, MB, Canada	July 2018
Tapping Into Algebraic Graph Theory of Signed Graphs Graduate Stduents Seminar, University of Calgary, Calgary, AB, Canada	March 2017
Some inverse eigenvalue problems for graphs Western Canada Linear Algebra Meeting(WCLAM), University of Manitoba, Winnipeg, MB, Canada	May 2016
Using the jacobian method to solve structured inverse	
eigenvalue problems	January 2016
Joint Mathematics Meetings, Seattle, WA, USA	0 . 1 . 2015
What do generalized cycles of a graph tell about each other? Research Seminars, University of Calgary, Calgary, AB, Canada	October 2015
How to find more solutions when you have one in hand Research Seminars, University of Calgary, Calgary, AB, Canada	September 2015
Nowhere-zero eigenbasis for a matrix with prescribed	J 0015
graph and spectrum Joint Mathematics Meetings, San Antonio, TX, USA	January 2015
Structured inverse eigenvalue problems Colloquium, Western Illinois University, Macomb, IL, USA	October 2014
Building vibrating systems using linear algebra and calculus	0 . 1 . 224
Student Colloquium, Western Illinois University. Macomb. IL. USA	October 2014
Student Colloquium, Western Illinois University, Macomb, IL, USA Skew-symmetric SIEP and the role of the jacobian method	October 2014 April 2014
Skew-symmetric SIEP and the role of the jacobian method Algebra Combinatorics and Number Theory seminars,	
Skew-symmetric SIEP and the role of the jacobian method Algebra Combinatorics and Number Theory seminars, University of Wyoming, Laramie, WY, USA	
Skew-symmetric SIEP and the role of the jacobian method Algebra Combinatorics and Number Theory seminars,	
Skew-symmetric SIEP and the role of the jacobian method Algebra Combinatorics and Number Theory seminars, University of Wyoming, Laramie, WY, USA The jacobian method and structured inverse	April 2014

	Zonotopal algebra, an expository talk Algebra Combinatorics and Number Theory seminars, University of Wyoming, Laramie, WY, USA	October 2013
	A structured inverse eigenvalue problem MathFest, Hartford, CT, USA	August 2013
	The λ - μ structured inverse eigenvalue problem Rocky Mountain Mathematics Consortium, University of Wyoming, Larami The λ - μ structured inverse eigenvalue problem	July 2013 e, WY, USA July 2013
	Rocky Mountain Discrete Math Days, University of Wyoming, Laramie, WY. The λ-μ structured inverse eigenvalue problem Rocky Mountain Discrete Math Days, Denver University, Denver, CO, USA	October 2012
	Constructing matrices with interlacing spectral data and graph Midwestern Graph Theory (MIGHTY) LIII Conference, Iowa State University, Ames, IA, USA	September 2012
	A jacobian approach to some structured inverse eigenvalue problems Algebra Combinatorics and Number Theory seminars, University of Wyoming, Laramie, WY, USA	September 2012
	Why is the permanent rank important? Graduate Student Combinatorics Conference, University of Illinois, Urbana-Champaign, IL, USA	April 2012
	On the permanent rank of matrices Joint Mathematics Meeting, Boston, MA, USA	January 2012
	Perrank v.s rank	October 2011
	Rocky Mountain Discrete Math Days, University of Wyoming, Laramie, W. What is the permanent?	March 2011
	Graduate Students Seminars, University of Wyoming, Laramie, WY, USA A different approach to the hall's marriage theorem Graduate Students Seminars, University of Wyoming, Laramie, WY, USA	May 2010
	A survey on the alon-jaeger-tarsi conjecture Algebra Combinatorics and Number Theory seminars, University of Wyoming, Laramie, WY, USA	November 2009
	Biweekly math problem solving seminars Undergraduate Students Seminars, Amirkabir University of Technology, Te	2006–2007 hran, Iran
	Poster Presentations	
	Existence of a Nowhere-Zero Eigenbasis in an SIEP IMA Workshop on Probabilistic and Extremal Combinatorics, Institute for Mathematics and its Applications, Minneapolis, MN, USA	September 2014
Professional Affiliations	Academy of Inquiry-Based Learning (AIBL) Canadian Mathematical Society (CMS) Mathematical Association of America (MAA) American Mathematical Society (AMS) Society for Industrial and Applied Mathematics (SIAM)	2015–Present 2015–Present 2014–Present 2009–Present 2009–Present
	Society for Industrial and Applied Mathematics (SIAM) International Linear Algebra Society (ILAS) Iranian Mathematical Society (IMS)	2009–Present 2008–Present 2007–2008
Service	Invited Reviewer International Journal of Computer Mathematics Mathematical Reviews Linear Algebra and its Applications Electronic Journal of Linear Algebra Journal of Linear and Multilinear Algebra	2017–Present 2017–Present 2016–Present 2014–Present 2012–Present

	Conference Co-organizer • AMS Special Session on Graphs and Matrices - JMM17 Atlanta, GA, USA - Co-organizers: Bryan Shader and Sudipta Mallik • Special Session on Emerging Topics in Graphs and Matrices - JMM18 San Diego, CA, USA - Co-organizers: Bryan Shader and Sudipta Mallik	2017 2018
	Teaching Grant Adjudicator Taylor Institute for Teaching and Learning at University of Calgary	2018
	Diversity & Equity Committee at University of Calgary Faculty of Science Postdoctoral Representative	2016–Present
	Safety Improvement Training Committee at University of Calgary Faculty of Science Postdoctoral Representative Mathematics and Statistics Postdoctoral Representative Certificates: QPR Suicide Prevention Gatekeeper Program Hazard Assessment Training Incident Reporting and Investigation Training Occupational Health and Safety Orientation	2016–Present 2015–Present March 2017 May 2016 May 2016 May 2016
	WHMIS 2015	May 2016
	Junior Math Contest Committee Contest designing team: University of Calgary, Canada Grading team: Western Illinois University, USA	2016–17 2015
	Mathematics Graduate Students Representative University of Wyoming, USA	2011 – 12
	Iranian Students Representative University of Wyoming, USA	2010–11
	Executive Member of the Management Council Students Scientific Association of Mathematics and Computer Science, Amirkabir University of Technology, Iran	2007-08
Grants	PIMS Post-Doctoral fellowship grant PIMS Alberta, University of Calgary, Canada	2016 Funded
	Additional Collaboration Grant for Mathematics Research Communit Algebraic and Geometric Methods in Applied Discrete Mathematics American Mathematical Society, USA	Funded
	Post-Doctoral fellowship grant Fundação para a Ciôncia e a Tecnologia (FCT), Portugal	2014 Not funded
Computer Skills	Math: Sage, Octave/Matlab, MAGMA, CoCoA, Maple, Mathematica	
	Programming: Python , and data analysis (SciKit-Learn, Pandas, etc.), Mac	chine Learning
	• Machine Learning certificate: Coursera, Stanford University	
	• Python for Data Science, Cognitive Class, an IBM initiative	
	Online teaching and management: Microsoft Lync, Elluminate Blackboard, Desire2Learn (D2L), Webwork, Lyryx, ALEKS, MyLab	
	Other: HTML; LATEX, Photoshop	
SUMMER SCHOOLS AND WORKSHOPS	Course Design Taylor Institute for Teaching and Learning, University of Calgary, Canada	October 2017
	The Slow Professor	August 2017
	Taylor Institute for Teaching and Learning, University of Calgary, Canada Lesson Study	May 2017
	Taylor Institute for Teaching and Learning, University of Calgary, Canada Beyond Student Feedback Taylor Institute for Teaching and Learning, University of Calgary, Canada	May 2017

	Navigating Conflict in the Classroom	March 2017
	Faculty of Science, University of Calgary, Canada	E-l 2017
	The Teaching Voice: Care and Confidence Taylor Institute for Teaching and Learning, University of Calgary, Canada	February 2017
	Collecting and Responding to Mid-Course Student Feedback Faculty of Science, University of Calgary, Canada	January 2017
	Flipped Learning Workshop Taylor Institute for Teaching and Learning, University of Calgary, Canada	October 2016
	Writing Good Questions Workshop Faculty of Science, University of Calgary, Canada	October 2016
	Creating Your Teaching Dossier Taylor Institute for Teaching and Learning, University of Calgary, Canada	September 2016
	The Role of Design-Thinking and Innovation in Learning Taylor Institute for Teaching and Learning, University of Calgary, Canada	September 2016
	Creating Your Teaching Philosophy Taylor Institute for Teaching and Learning, University of Calgary, Canada	September 2016
	Instructional Skills Workshop Taylor Institute for Teaching and Learning, University of Calgary, Canada	September 2016
	Making Sense of Student Feedback Faculty of Science, University of Calgary, Canada	May 2016
	18 th Annual Legacy of R. L. Moore, Inquiry-Based Learning Conference Educational Advancement Foundation and Mathematical Association of America, Austin, USA	June 2015
	IMA Workshop: Probabilistic and Extremal Combinatorics Institute for Mathematics and its Applications, Minnesota, USA	September 2014
	Rocky Mountain-Great Plains GRWC in Combinatorics The University of Colorado Denver and The University of Denver, USA	July 2014
	Algebraic and Geometric Methods in Applied Discrete Mathematics Mathematics Research Communities program, Snowbird, UT, USA	June 2014
	Mathematical Sciences on Combinatorial Zeta and L-functions NSF-CBMS Regional Research Conference, Sundance, UT, USA	May 2014
	Algebraic Graph Theory Rocky Mountain Mathematics Consortium, University of Wyoming, USA	June 2013
	Polyhedral Geometry and Algebraic Combinatorics Rocky Mountain Mathematics Consortium, University of Wyoming, USA	June 2011
	2 nd International Combinatorics Conference - IPM20 Institute for Research in Fundamental Sciences (IPM), Tehran, Iran	May 2009
	13 th International CSI Computer Conference (CSICC 2008) Sharif University, Iran	March 2008
	38 th Annual International Iranian Mathematics Conference Zanjan University, Iran	Jun 2007
Volunteering	University of Calgary Open House Postdoctoral Representative for Mathematics and Statistics Department	October 2016
	Banff International Film Festival Green Team and Organizing Team	November 2015

REFERENCES AVAILABLE TO CONTACT



















Dr. Peter Lancaster

Professor Emeritus of Applied Mathematics

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Relation: Postdoctoral Supervisor

Dr. Bryan Shader

Professor of Mathematics University of Wyoming, USA Email: bshader@uwyo.edu Phone: 307-766-6826 Relation: Ph.D. Advisor

Dr. Shaun Fallat

Professor of Mathematics and Department Head

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Phone: 306-585-4107 Relation: Colleague

Dr. Michael Cavers

Adjunct Professor

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Phone: 403-220-6305

Relation: Postdoctoral Supervisor

Dr. Farhad Jafari

Professor of Mathematics and Department Head

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Relation: Department Head, Non-thesis Advisor, Committee Member

Dr. Eric Moorhouse

Professor of Mathematics University of Wyoming, USA Email: moorhous@uwyo.edu Phone: 307-766-4394

Relation: Committee Member

Dr. Jim Stallard

Teaching Professor

University of Calgary, Canada **Email:** jbstall@ucalgary.ca

Phone: 403-220-3953

Relation: Associate Head Teaching and Learning

(Concerning Teaching)
Dr. Charlie Angevine

Affiliated Faculty

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Relation: Course Supervisor (Concerning Teaching)

Dr. Thi Dinh

Senior Instructor

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Relation: Course Coordinator, Assistant Head-Undergraduate

(Concerning Teaching)