

Dorsa Ghoreishi

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EDUCATION

Ph.D., Mathematics

May 2020

University of Missouri, Columbia, MO

- Dissertation: *Phase Retrieval in Frame Theory*
- Advisor: Prof. Peter Casazza

B.S., Applied Mathematics

May 2014

K.N.Toosi University of Technology, Tehran, Iran

PROFESSIONAL APPOINTMENTS

Assistant Professor

July 2023 - Present

Department of Mathematics and Statistics
Saint Louis University, St. Louis, MO

Visiting Assistant Professor

August 2020 - June 2023

Department of Mathematics and Statistics
Saint Louis University, St. Louis, MO
Mentor: Dr. Daniel Freeman

GRANTS AND AWARDS

- National Science Foundation Research Grant, “Frame theory and phase retrieval”, DMS-2154931, \$332,696, June 2022 - May 2025.
- Stolle Award (faculty development award), Saint Louis University, March 2020, September 2021, September 2022, March 2023, September 2023 and March 2024.
- MO Project NExT fellow, October 2020 - present.
- Excellence in Teaching Award, University of Missouri, May 2018

PUBLICATIONS

- Alharbi, W., Alshabhi, S., Freeman, D., Ghoreishi, D., and Johnson, B. Lovasoa Randrianarivony, N. *Declicking and the recovery of vectors from saturated measurements*, arXiv:2402.03237v1, submitted.
- Alharbi, W., Freeman, D., Ghoreishi, D., Lois, C., and Sebastian, S., *Stable phase retrieval and perturbations of frames*, Proc. Amer. Math. Soc. Ser. B 10 (2023), 353-368.
<https://doi.org/10.1090/bproc/185>.
- Alharbi, W., Alshabhi, S., Freeman, D. and Ghoreishi, D., *Locality and stability for phase retrieval*, Sampl. Theory Signal Process. Data Anal. 22, 10 (2024). <https://doi.org/10.1007/s43670-024-00084-y>.
- Freeman, D., and Ghoreishi, D. (2022), *Discretizing L_P norms and frame theory*, JMAA, Volume 519, Issue 2
- Casazza, P.G., and Ghoreishi, D. (2020), *Phase retrieval by projections in R^n requires $2n - 2$ projections*, arXiv:2012.10738.

- Casazza, P.G., Ghoreishi, D., Jose, S. and Tremain, J.C. (2017), *Norm retrieval and phase retrieval by projections*, Axioms, 6(1), p.6.
- Botelho-Andrade, S., Casazza, P.G., Ghoreishi, D., Jose, S. and Tremain, J.C. (2017), *Weak Phase Retrieval*, Compressed Sensing and its Applications (pp. 221-234). Birkhäuser, Cham.

MENTORSHIP EXPERIENCE

- Co-advising a master's student.
- Research mentor for an undergraduate student at Denver University, through AWM Mentor Network Program, January 2022 - present
- Faculty advisor for AWM student chapter, Saint Louis University, September 2021 - present
- Teaching development mentor for new graduate teaching assistants, University of Missouri, August 2017 - May 2020.
- Research mentor for an undergraduate student, Frame Research Center, University of Missouri, June 2018 - May 2019.

TEACHING EXPERIENCE

- Saint Louis University:
 - Math1400: Precalculus
 - Math1510: Calculus I
 - Math1520: Calculus II
 - Math3110: Linear Algebra for Engineers
 - Math3270: Advanced Math for Engineers
 - Math3550: Differential Equations
 - Math4550: Non-linear Dynamics and Chaos
 - Math4930/5930: Capstone, Frame Theory
- Graduate Student Instructor at the University of Missouri-Columbia:
 - MATH2300: Calculus III
 - MATH1700: Calculus II (Recitation sessions)
 - MATH4100/7100: Ordinary Differential Equations
 - MATH1500: Analytical Geometry and Calculus
 - MATH1100: College Algebra
 - MATH2320: Discrete Mathematical Structures
 - MATH1400: Calculus I (Recitation sessions)

SERVICES

- Co-organized a Sonia Kovolevsky Day at Washington University in St. Louis.
- Serving as a committee member for PhD students Salah Alshabhi and Wedad Alharbi and Simon McCreary-Ellis at Saint Louis University.
- Co-advising a master's student Olivia Frank at Saint Louis University.
- Undergraduate honors thesis advisor for Madison Sousa at Denver University.
- Faculty advisor for AWM student chapter, Saint Louis University, September 2021 - present.
- Colloquium committee member, Saint Louis University, August 2021 - present.
- Program and assessment committee member, Saint Louis University, August 2021 - May 2022.
- Graduate analysis seminar organizer, University of Missouri, August 2019 - May 2020.
- President of the AWM student chapter, University of Missouri, August 2018 - May 2020.
- Vice president of the AMS Student Chapter, University of Missouri, August 2017 - May 2019.
- Active member of the Graduate Professional Council, University of Missouri.

RESEARCH VISITS, CONFERENCES AND TALKS

- Talks and Research Visits
 - Visit to the Acoustics Research Institute (ARI) and the University of Vienna, June 15-20, 2024, Vienna, Austria.
 - “Vector recovery: saturation recovery and phase retrieval”, Strobl24; More on Harmonic Analysis, June 9-15, 2024, Strobl, Austria
 - Visit to the University of Vienna, June 6-9, 2024, Vienna, Austria.
 - “Saturation recovery and phase retrieval”, Research term Lattice Structures in Analysis and Applications, May 20-24, 2024, Instituto de Ciencias Matemáticas, Madrid, Spain
 - “Vector recovery by phase retrieval and saturation recovery”, Colloquium Talk, Florida International University, April 2024, Virtual
 - “Generalizing max filtering with principle angles”, AMS Special Session on Geometry and Symmetry in Data Science, Spring Southeastern Sectional Meeting, March 2024, Tallahassee, FL
 - “Declipping and the recovery of vectors from saturated measurements”, Special Session on Bases and Frames in Hilbert Spaces, AMS Spring Southeastern Sectional Meeting, March 2024, Tallahassee, FL
 - “Declipping and the recovery of vectors from saturated measurements”, Workshop on Dynamical Sampling, Frame Theory, Harmonic Analysis, and Applications, Vanderbilt University, March 2024, Nashville, TN
 - “Stable Phase Retrieval under Perturbations”, Frame Theory Day Conference, Saint Louis University, October 2023, St. Louis, MO

- “Stable Phase Retrieval under Perturbations”, International Conference on Approximation Theory and Beyond, Vanderbilt University, May 2023, Nashville, TN
 - “Stable Phase Retrieval and Perturbations of Frames”, AMS Spring Central Sectional Meeting, April 2023, Cincinnati, OH
 - “Frame theory and phase retrieval”, MAA Missouri Section Meeting, March 2023, Springfield, MO
 - “Stable Phase Retrieval and Norm Discretization”, 8th International Conference in Computational Harmonic Analysis(ICCHA22), September 2022, Ingolstadt, Germany
 - “Discretizing L_p Norms and Frame Theory”, MSRI Special Session on Frame Theory and Applications, April 2022, Virtual Joint Mathematics Meetings
 - “Discretizing L_p Norms and Frame Theory”, March 2022, Vanderbilt University, Virtual
 - “Discretizing L_p Norms”, TWIMS, Rice University, February 2022, Houston, TX
 - “Introduction to Weak Phase Retrieval”, 45th Annual New York State Regional Graduate Mathematics Conference, March 2020, Syracuse University, NY
 - “Phase Retrieval”, 43rd annual meeting of the SIAM-SEAS Southeastern Atlantic Section, September 2019, University of Tennessee-Knoxville, TN
 - “Weak Phase Retrieval and Phaseless Reconstruction”, 7th Women in Mathematics Symposium, April 2019, University of Iowa, IA
 - “Introduction to Frame Theory” at the Analysis Seminar, May 2018, University of Missouri
 - “Phase Retrieval” at the AMS Student Chapter Seminar, April 2017, University of Missouri
 - “Weak Phase Retrieval” at the Graduate Analysis Seminar, October 2016, University of Missouri
- Attended conferences and workshops
 - International Conference on Computational Harmonic Analysis (ICCHA21), September 2021, Virtual
 - Joint Mathematics Meetings, January 2020, Denver, CO
 - 43rd annual meeting of the SIAM-SEAS Southeastern Atlantic Section, September 2019, University of Tennessee, TN
 - Analysis in Missouri: a Midwestern Symposium, September 2019, University of Missouri, MO
 - Spring Opportunities Workshop, April 2019, American Institute of Mathematics, San Jose, CA
 - 7th International Conference on Computational Harmonic Analysis in conjunction with the 33rd annual Shanks Lecture, May 2018, Vanderbilt University, TN
 - 6th Midwest Women in Mathematics Symposium, April 2018, Purdue University, IN
 - NSF Decoding Science Communication and Training Program, August 2017, University of Missouri, MO
 - NSF/CBMS Conference on Sparse Approximation and Signal Recovery Algorithms, May 2017, New Mexico State University, NM