MARK MAGSINO

The Ohio State University ◇ Department of Mathematics
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EDUCATION

University of Maryland **May 2018**
Ph.D. in Mathematics

Carnegie Mellon University **May 2012**
B.S. in Mathematics & Japanese Studies

RESEARCH INTERESTS

My research interests include frame theory and its applications to signal and image processing, compressed sensing, and optimal line packings.

PROFESSIONAL EXPERIENCE

The Ohio State University **2018 - Present**
Research Visiting Assistant Professor

MITRE Corporation **Jun - Aug 2015**
Graduate Research Intern

PUBLICATIONS

Journal Articles

1. M. Magsino, D.G. Mixon, H. Parshall. "Kesten-McKay law for random subensembles of Paley equiangular tight frames". *Constructive Approximation*, 2020.
2. M. Magsino. "Constructing Tight Gabor Frames Using CAZAC Sequences" *Sampling Theory in Signal and Image Processing*, 16:73-99, 2017.

Book Chapters

3. J.J. Benedetto, K. Cordwell, and M. Magsino. "CAZAC Sequences and Haagerup's Characterization of Cyclic N-roots". *New Trends in Applied Harmonic Analysis: Sparse Representations, Compressed Sensing, and Multifractal Analysis II*. Birkhäuser, 2019.

Conference Proceedings

4. M. Magsino, D.G. Mixon, H. Parshall. "Linear Programming bounds for cliques in Paley graphs". *SPIE Optics + Photonics 2019*.
5. M. Magsino, D.G. Mixon. "Biangular Gabor frames and Zauner's conjecture". *SPIE Optics + Photonics 2019*.
6. M. Magsino, D. G. Mixon, H. Parshall. "A Delsarte-style proof of the Bukh–Cox bound". *Sampling Theory and Applications 2019*.

INVITED TALKS AND PRESENTATIONS

CUNY Graduate Center Harmonic Analysis and PDE Seminar Mar 2022
CUNY Graduate Center

Wavelets and Sparsity XVIII Aug 2019
SPIE Optics + Photonics

Algebra, Geometry, and Combinatorics of Subspace Packings Jul 2019
SIAM Conference on Applied Algebraic Geometry

Special Session on Frame Theory Jul 2019
Sampling Theory in Signal and Image Processing (SampTA)

Special Session on Wavelets, Frames, and Related Expansions Apr 2018
AMS Spring Western Sectional Meeting

AMS Special Session on Recent Advances in Packing Mar 2018
AMS Spring Central Sectional Meeting

Norbert Wiener Center Seminar Oct 2017
University of Maryland

TEACHING

The Ohio State University **2018 - Present**

Vector Analysis	Fall 2020 - Fall 2021
Differential Equations and Their Applications	Spring 2020
Foundations of Higher Mathematics	Fall 2019
Ordinary and Partial Differential Equations	Spring 2019
Engineering Mathematics A	Fall 2018, Spring 2022

University of Maryland **2012 - 2018**

Instuctor of Record

Introduction to Probability	Fall 2016
Introduction to and Classification of Differential Equations	Summer 2013
Elementary Probability and Statistics	Spring 2013, Fall 2013

Teaching Assistant

College Algebra and Trigonometry	Fall 2012
Precalculus	Spring 2014, Fall 2014
Calculus I	Spring 2017, Fall 2017
Introduction to and Classification of Differential Equations	Spring 2015

Carnegie Mellon University **2011 - 2012**

Differential and Integral Calculus	Fall 2011
Integration, Differential Equations, and Approximation	Spring 2012

MENTORSHIP

Undergraduate Research Mentorship

Yixin Xu. Project exploring CAZAC sequences of length 10. Fall 2021

Abhishek Vijaykumar. Project on biangular Gabor frames and Zauner's conjecture. Fall 2019

Katherine Cordwell. "CAZAC Sequences and Haagerup's characterization of cyclic N-roots". Co-mentored with John J. Benedetto. 2017-2018

University of Maryland Directed Reading Program

Lauren Fox. "Markov Chains and the Ergodic Theorem". Fall 2013

Christopher Ostermann. "A Philosophical Enquiry of ZFC". Spring 2016

High School Student Mentorship

June Richardson. "Fractal Analysis and its Applications". Senior capstone project. 2019 - 2020

SERVICE

Norbert Wiener Center Seminar Organizer Fall 2016 - Spring 2018

Special Session on Optimizaiton for Discrete Geoemetry – Session co-organizer Apr 2020
AMS Spring Central Sectional Meeting. Cancelled due to COVID-19.

SKILLS

Languages English (native speaker), Japanese (advanced proficiency)
Software LaTeX, Python, Matlab, Mathematica, Git

Last updated: March 26, 2022