Shahriyar (Shah) Roshan Zamir

+1 706-201-0540 ⋄ sroshanzamir2@huskers.unl.edu⋄ *Link to Personal Webpage*

EDUCATION

Mathematics Doctoral Candidate   August 2019 - present
University of Nebraska Lincoln (UNL)

M.A. Pure Mathematics   May 2021
University of Nebraska Lincoln

M.S. Applied and Computational Mathematics   August 2017 - May 2019
Graduate Minor in Liberal Studies
University of Minnesota Duluth (UMD)
Duluth, MN, USA

B.S. Pure Mathematics   August 2014 - May 2017
Georgia Gwinnett College
Lawrenceville, GA, USA

Rochester Institute of Technology - Dubai Campus (Freshman year)   August 2013 - May 2014
Dubai, United Arab Emirates

RESEARCH

Interests

· Commutative Algebra, Computational Algebra, Algebraic Geometry, Representation Theory, Finite Group Theory.

Publication

· *"An Isomorphism Theorem for Arithmetic Complexes"*, Submitted.
(with Luca Fiorindo, Ethan Reed, Hongmiao Yu.)

· *"Axial Constants and Sectional Regularity of Homogeneous Ideals"*
(With M. DeBellevue, A. Lebovitz, Y.Li, M. Lotfi, S. Mohite, X. Pan, M.S. Pathak, A. Seceleanu, S.X Zhang.)
Proc. Amer. Math. Soc. 151 (2023), no. 4, 1363 - 1378

· *"Subgroups of Groups of Units Modulo n"*
(with Joe. Gallian.)
Mathematics Magazine, October 2022.
Link to article.

· *"On Uniform and Non-Uniform Magic Cubes"*
In process of revision and resubmission for the *Australian Journal of Combinatorics.*

Master's Thesis

· Title: "*Subgroups of Groups of Units Modulo n*"
Link to Master's Thesis
I identified and gave a full classification of some new families of subgroups of groups of units mod n.

RESEARCH PRESENTATIONS

· "*Alexander-Hirschowitz theorem in the weighted projective space.*"   May 2024
invited talk: AMS sectional-San Francisco

· "*Interpolation in the Weighted Projective Space*"   December 2023
invited talk: Canadian Mathematical Society Winter Meeting-Montreal

· Poster Presented: "*Interpolation in the Weighted Projective Space*"   May-November 2023
MSRI summer school in Commutative Algebra-Notre Dame, BrianFest, KUMUNU,
Western Algebraic Geometry Symposium (WAGS),

· Presented: "*Hilbert function of the defining ideal of orbits of D_6 acting on $\mathbb{P}^2$*"   October 2022
Commutative Algebra Reading Seminar (CARS)-UNL

· Presented: "*A simplified proof of Nagata's Counter Example to Hilbert's 14th Problem*"   April 2022
Commutative Algebra Regional Expository Seminar - Online
Link to talk's recording

· Presented: "*Nagata's theorem on the ring of invariants*"   March 2022
Second Comprehensive Exam - UNL
Succesfully passed and qualifed as a Ph.D. candidate.

· Presented: "*Hilbert's Fourteenth's Problem and Geometric Invariant Theory*"   November 2021
Commutative Algebra Regional Expository Seminar - Online
Link to talk's recording

· Presented: "*Geometric Invariant Theory-An Introduction*"   October/November 2021
Commutative Algebra Reading Seminar - UNL
In a series of two talks I gave an introduction to Geometric Invariant Theory.

· Presented: "*Twisted Mathematics: Subtle Microaggressions in 21st Century Math Movies*"   April 2019
GRAD Talk Series-University of Minnesota Duluth

· Presented: "*Subgroups of Groups of Units Modulo n*"   January 2019
MAA General Session on Algebra - Joint Mathematics Meetings, Baltimore, MD

· Presented: "*Subgroups of Groups of Units Modulo n*"   October 2018
MAA North Central Section Meeting - Southwest Minnesota State University

· Presented: "*Algebraic Structure of Labeled Graphs Joined by j Edges*"   April 2017
Kappa Mu Epsilon National Convention - Evangel University, Springfield, MO

· Presented: *"Poster: Algebraic Structure of Labeled Graphs Joined by j Edges"*   January 2017
  MAA Undergraduate Poster Session - Joint Mathematics Meetings, Atlanta, GA

· Presented: *"Normal Magic Cubes and Euler Cubes"*   October 2015
  Kennesaw Mountain Undergraduate Mathematics Conference, Kennesaw, GA

AWARDS AND HONORS

· Ben Carse Nolting Award   Fall 2021
  "For efforts to create a department culture and climate that actively
  advances diversity, equity and inclusion in tangible and sustainable ways."

· Parents' Recognition Award - UNL   Fall 2019

· Outstanding Graduate Teaching Assistant Award - UMD   Spring 2019

· Graduate Student Service Award - UMD   Spring 2019
  For numerous contributions to UMD math department's graduate community
  and representing math grad students at departmental meetings.

· Bulldog Award - UMD   Spring 2019
  For serving in co-curricular activities " where their exemplary service
  and leadership qualities has positively affected the University community."

· Recipient of Certificate: Thank a Teacher Project - UMD   Spring 2019
  Presented by: Center For Educational Innovation - Nominated anonymously by students for
  "outstanding teaching and dedication to helping students learn."

· UMD Mathematics and Statistics Department Summer Research Fellowship   Summer 2018

· Georgia Gwinnett College Graduation Honor: Cum Laude

· Georgia Gwinnett College : President's List   Spring 2016

· Georgia Gwinnett College : Dean's Honors List   Fall/Spring 2015

PROFESSIONAL ACTIVITY

· Recent Developments in Commutative Algebra (MSRI), April 2024   April 2024

· Introductory Workshop in Commutative Algebra (MSRI)   January 2024

· PRAGMATIC-Catania,Italy   Summer 2023
  Promotion of Research in Algebraic Geometry for MAThematicians in Isolated Centres

· MSRI summer school in Commutative Algebra and Algebraic Geometry   Summer 2023
University of Notre Dame

· Referee for MAA's Mathematics Magazine   Fall 2023-Present

· Pan-American School in Commutative Algebra, Guanajuato, Mexico.   Summer 2022

· Organizer: Commutative Algebra Regional Expository Seminar-CARES   Spring 2022-Present
Link to Website

· PolyMath Jr. REU Graduate Student Mentor (*Link to Website*)   Summer 2021
Mentored 20 undergraduate students on research in commutative algebra.

· Directed Reading Program Mentor - UNL   Spring 2020
Link to Programs Website

· Assistant Latex Editor - 10th edition of Contemporary Abstract Algebra   Summer 2020
I helped Dr. Joe Gallian implement changes in the 10-th edition
of his book Contemporary Abstract Algebra, a classic in undergraduate abstract algebra.

· Documentary Premiere:"*There Will Be An Answer*" (producer/co-director)   January 2020
Joint Mathematics Meetings, Denver, CO
Link to documentary

· Site Coordinator at UNL - Triage Judge   Spring 2020/2021
Mathematical Contest in Modeling (MCM)/The Interdisciplinary Contest in Modeling (ICM)
Link to ICM/MCM website

· Triage Judge-MCM/ICM   Spring 2018/2019/2022

· Member of American Mathematical Association   October 2017-present

· Member of Kappa Mu Epsilon - National Mathematics Honors Society   June 2015-present

TEACHING EXPERIENCE

* Denotes I taught the course as the *instructor of record* with full course responsibilities.

Graduate Teaching Assistant - University of Nebraska Lincoln   September 2019 - Present

· **Geometry Matters**   Fall 2023
A geometry class for future elementary school teachers.

· **Associate Convener-Calculus II**   Spring 2023
Associate Convener duties: hold weekly meetings for all other GTAs,

observe and give teaching/classroom feedback to other GTAs,
serve as a liaison between instructors and GTAs.

· **Differential Equations Recitation**   Fall 2022

· **Associate Convener-College Algebra***   Fall 2021-Spring 2022
Associate Convener duties: writing the syllabus, parts of the course policy,
quizzes/exams/rubrics for all 11 sections/400 students enrolled in the course.
Observing and providing constructive pedagogical feedback to instructors.

· **College Algebra* (*Thompson Scholars*)**   Spring 2021
Chosen by the department to teach a section dedicated to
minority/first generation college students in the Thompson's Scholars program.

· **College Algebra***   Fall 2020

· **Calculus III Recitation**   Spring 2020

· **Calculus I Recitation**   Fall 2019

Upward Bound (UB) Program (*Link to UB's Website.*)

· **ACT Prep Boot Camp for UB at University of Wisconsin-Superior*** December 2020-March 2021
An online course focused on ACT Mathematics/Science prep through active learning.

· **University of Wisconsin-Superior (UWS)***   June - July 2020/2019
Taught a variety of topics, through active learning, during three and a half hour sessions
including: ACT prep, introductory combinatorics, Algebra II,
basic logic, Pre-Calculus and Probability.

· **College of St. Scholastica***   June 2020/2019
Class time ran for three hours, topics similar to UWS.

Graduate Teaching Assistant - University of Minnesota Duluth   August 2017 - May 2019

· **Calculus I Recitation**   Spring 2019

· **Calculus II Recitation**   Fall 2018

· **Math 103 - Pre-Algebra***   Spring 2018

· **Discrete Math**   Spring 2018
Helped students, 30 total, with proof writing in an active learning format.
Occasionally prepared worksheets and lectured for the class.

- **Securian Math Lab**   Spring 2018

- **Calculus I Recitation**   Fall 2017

- **Full time Mathematics Tutor - Gwinnett Technical College**   January 2016 - July 2017

- **Volunteer Tutoring - RIT Dubai Tutoring Center**   August 2013 - June 2014

SERVICE

- Treasurer, American Mathematical Society Student Chapter at UNL   Fall 2022-Spring 2023

- Organizer: Upcoming Researchers in Commutative Algebra (URiCA aka KUMUNUjr)   Spring 2023

- Presented: "REUs, What, Why and How"   December 2022
  Undergraduate Math Club-UNL

- Nebraska Conference for Undergraduate Women in Mathematics   Fall 2021/2022
  Organizing Committee Member, *Link to Conference's Website.*

- Mentor to a first year mathematics graduate student at UNL   2021-2022, 2023-2024

- Presented: *"Subgroups of Groups of Units Modulo n"*   November 2020
  Undergraduate Math Club - UNL
  Aimed at familiarizing undergraduate math majors with mathematics research.

- Presented: *"Workshop: Group Theory in Action"*   November 2018
  Sonya Kovalevsky Day - College of St. Scholastica, Duluth, MN
  Sonya Kovalevsky Day is aimed at encouraging female high school students to pursue Math.

- Volunteer Judge   January 2018
  Undergraduate Poster Session - Joint Mathematics Meetings, San Diego, CA

- Graduate Programs Committee - Elected Student Representative   August 2018 - May 2019
  University of Minnesota-Duluth

- Graduate Student Representative to the Mathematics and Statistics Department August 2017 - May 2019
  University of Minnesota Duluth

- Invited Panelist - Sonya Kovalevsky Day   November 2017

- President of Kappa Mu Epsilon National Mathematics Honors Society   June 2015 - May 2017
  GA Zeta Chapter at Georgia Gwinnett College

- Vice President - Georgia Gwinnett College Math Club   August 2015 - May 2017