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EMPLOYMENT	<b>Postdoctoral Fellow</b> , Stockholm University.	2021 - 2023
EDUCATION	<b>Ph.D. in Mathematics</b> , Emory University. Advisor: <a href="#">John. F. R. Duncan</a> .	2021
	<b>Master of Science in Mathematics</b> , Emory University.	2020
	<b>B.S.</b> , <a href="#">Lahore University of Management Sciences</a> . Major: Physics; Minor: Mathematics.	2015
RESEARCH	<b>Elliptic Curves and Thompson's Sporadic Simple Group.</b> <i>Journal of Number Theory</i> ; <a href="#">arXiv:2008.01607</a> <b>On Moonshine and Elliptic Curves.</b> (Ph.D. Dissertation 2021) <b>Quivers: Representations, Mutations and Applications.</b> (Undergrad Thesis – Expository)	
ACADEMIC APPOINTMENTS	<b>Stockholm University, Stockholm, Sweden</b> Group Representation Theory, Instructor of Record	Spring 2022
	<b>Emory University, Atlanta, Georgia</b> Linear Algebra, Instructor of Record Calculus II, Instructor of Record Calculus II, Instructor of Record Calculus I, Instructor of Record Calculus I, Instructor of Record Calculus II, Instructor of Record Calculus I, Instructor of Record Calculus I & II, Tutor Linear Algebra, Teaching Assistant & Grader Real Analysis, Grader	Spring 2021 Spring 2020 Fall 2019 Spring 2019 Fall 2018 Spring 2018 Fall 2017 2016 – 2017 Spring 2017 Fall 2016
	<b>Lahore University of Management Sciences, Lahore, Pakistan</b> Linear Algebra with Differential Equations, Teaching Assistant & Grader Physics Instructor, National Outreach Program Waves and Optics, Teaching Assistant and Grader Modern Physics, Teaching Assistant and Grader	Summer 2014 Summer 2014 Spring 2014 Spring 2013
	<b>Arizona Winter Semester 2021: Virtual School in Number Theory</b> Invited Course Assistant for “Quadratic Forms & the Local-Global Principle”	Spring 2021
HONORS AND AWARDS	<b>The Graduate Student Research Award</b> <b>The Marshall Hall, Jr., Award</b>	2021 2021

- Awarded annually to a doctoral student in the Department of Mathematics at Emory University as a recognition of their teaching.
- Candidates must have taught for at least two years and have strong academic records with promise for excellence in mathematical research.

#### **Emory College Online Teaching Services Fellowship** Summer 2020

- Nominated by the chair of the department of mathematics.
- Facilitated a three week training for a faculty cohort of 36 math instructors. The training covered essentials of online course design, digital pedagogy, and the Emory College Online model.
- Participated in a month-long training for facilitators.

#### **Emory Advanced Graduate Teaching Fellowship** 2019–2020

- Participated in a weekly graduate seminar focused on active learning practices, inclusive teaching and curricular design strategies.
- Completed the Center for the Integration of Research Teaching and Learning (CIRTL) Network's Online Course *An Introduction to Evidence-Based Undergraduate STEM Teaching*, with distinction.
- Developed and presented a Teaching-As-Research (TAR) project titled *Measuring the Role of Curiosity in Student Engagement and Performance*.

#### INVITED TALKS

- Joint Mathematics Meetings. Jan 8th, 2022  
AMS Special Session "Modular Forms and Combinatorics."  
Title: **Modular Forms & Moonshine.**
- Rutgers Lie Group/Quantum Mathematics Seminar. Nov 12th, 2021  
Title: Moonshine and Elliptic Curves.  
Online Seminar; ([Link](#))
- John Conway Spirited Seminar, Lahore University of Management Sciences. Nov 1st, 2021  
Title: **Moonshine and Arithmetic.**  
Online Seminar; ([Link](#))
- "What is...?" seminar, University of Queensland. Oct 11th, 2021  
Title: **"What is... moonshine?"**  
120-min; Online Seminar. ([Link](#))
- Specialty Seminar in Partition Theory,  $q$ -Series, and Related Topics. Sep 30th, 2021  
Title: **Weight  $\frac{3}{2}$  moonshine for the Thompson group.**  
Online Seminar; ([Link](#))
- UW Algebra and Algebraic Geometry Seminar. Mar 9th, 2021
  - Title: **What is... Moonshine?**  
Virtual "Pre-Seminar" talk aimed at grad students;
  - Title: **Elliptic Curves and Moonshine**  
Online Seminar. ([Link](#))
- University of Virginia Number Theory Seminar. Feb 19th, 2021  
Title: **Elliptic Curves and Moonshine.**  
Online Seminar. ([Link](#))

- Joint Mathematics Meetings. Jan 8th, 2021  
*AMS Special Session on Algebraic and Arithmetic Geometry.*  
 Title: **Elliptic Curves and Moonshine.**  
 Virtual Conference; ([Link](#))
- Number Theory Seminar, University of Georgia. Sep 16th, 2020  
 Title: **Elliptic Curves and Moonshine.**  
 Online Seminar. ([Link](#))
- Vanderbilt University Number Theory Seminar. Sep 1st, 2020  
 Title: **Elliptic Curves and Moonshine.**  
 Online Seminar. ([Link](#))
- CONTRIBUTED TALKS
  - The Autumn Meeting of the Swedish Math Society Nov 19th, 2021  
**Elliptic Curves and Moonshine.**  
 Online Meeting/Uppsala, Sweden.
  - Women in Automorphic forms, Universität Bielefeld. Sep 20th, 2021.  
 Title: **Moonshine and Elliptic Curves.**  
 Online Conference; ([Link](#))
  - New Developments in Number Theory. Mar 2nd, 2021  
 Title: **Elliptic Curves and Thompson's Sporadic Group**  
 Virtual Contributed talk series. ([Link](#))
  - Women at the Intersection of Mathematics and Theoretical Physics.  
 Title: **Elliptic Curves and Thompson's group.** Feb 22nd, 2021  
 Online Conference; "Gong show" mini-presentation. ([Link](#))
  - Modularity in Quantum Systems Dec 15th, 2020  
 Title: **Elliptic Curves and Thompson's group.**  
 Online Conference; "Gong show" mini-presentation. ([Link](#))
  - Madison Moduli Weekend Sep 27th, 2020  
 Title: **Elliptic Curves and Moonshine.**  
 Online Conference; 5-min "lightning talk." ([Link](#))
  - Palmetto Joint Arithmetic, Modularity, and Analysis Series.  
 Title: **Elliptic Curves and Thompson's group.** Sep 19th, 2020  
 Online Conference. ([Link](#))
  - Advanced Graduate Teaching Fellowship Symposium May 5th, 2020  
 Title: **Measuring the Role of Curiosity in Student Engagement and Performance.** (*Teaching-as-Research Project.*)  
 Virtual Symposium.
- SEMINAR TALKS (LOCAL)
  - At Emory University, Atlanta, Georgia.
    - Emory student seminar in Algebra and Number Theory Oct 2020  
 Title: **Elliptic Curves and Moonshine.**
    - Emory student seminar in Algebra and Number Theory Oct 2019  
 Title: **Borcherd's Products.**
    - Analytic Number Theory - Spring 2019. Apr 2019  
 Title: **Littlewood's Theorem: Oscillation of Error Terms**
    - Emory student seminar in Algebra and Number Theory Apr 2019  
 Title: **Elliptic Curves and Moonshine.**

- Emory student seminar in Algebra and Number Theory Dec 2018  
Title: **Generic Moonshine Talk**
- Commutative Algebra & Geometry - Fall 2018. Nov 2018  
Title: **Dimension Theory of Regular Local Rings**
- Emory Vertex Operator Algebras Seminar Apr 2018  
Title: **Conway Moonshine, Part II**
- Emory Vertex Operator Algebras Seminar Apr 2018  
Title: **Conway Moonshine, Part I**
- Emory Vertex Operator Algebras Seminar Feb 2018  
Title: **Representation theory of finite-dimensional Lie algebras**
- Emory student seminar in Algebra and Number Theory Nov 2017  
Title: **The Weyl denominator formula**
- Emory student seminar in Algebra and Number Theory Mar 2017  
Title: **Introduction to Quantum Mechanics**
- Emory Number Theory Seminar, Nov 2016  
Title: **Borcherds Algebras and Modular forms**

**At Lahore University of Management Sciences, Lahore.**

- Physics Seminar, LUMS. Summer 2014  
(Series of talks) titled: **Finite Group Representation Theory**
- LUMS Undergraduate Algebra II course Spring 2014  
(Series of talks) titled: **Introduction to Ring Theory**

**CONFERENCES & WORKSHOPS**

- Women in Noncommutative Algebra and Representation Theory 3  
Infinite-Dimensional Lie Theory research group Apr 2022  
Location: Banff International Research Station (BIRS), Canada.
- Joint Mathematics Meetings. Jan 2022
- Research Program “*Moduli and Algebraic Cycles*” Aug-Dec, 2021  
Location: Institut Mittag Leffler, Stockholm.
- Women in Automorphic Forms. Sep 2021  
Online Conference; Universität Bielefeld.
- Math Summer Program for Inclusive Excellence. June-July 2021  
Online Summer Program; University of Connecticut.
- Arizona Winter Semester 2021 Mar 22-Apr 30, 2021  
Virtual School in Number Theory; Invited Course Assistant.
- “Women at the Intersection of Mathematics and Theoretical Physics.”  
Online Meeting; Perimeter Institute. Feb 2021
- 23rd Annual Nebraska Conference for Undergraduate Women in Mathematics Jan 2021  
Online Conference; Invited Graduate Student Mentor ([Link](#))
- Joint Mathematics Meetings. Jan 2021  
Online Conference; ([Link](#))
- Palmetto Joint Arithmetic, Modularity, and Analysis Series Dec 2020  
(Part II) Online Conference; ([Link](#))
- Modularity in Quantum Systems Oct 2020 - Dec 2020  
Online Conference; Kavli Institute of Theoretical Physics. ([Link](#))
- Madison Moduli Weekend Sep 2020  
Online Conference; University of Wisconsin-Madison. ([Link](#))
- Palmetto Joint Arithmetic, Modularity, and Analysis Series. Sep 2020  
Online Conference; ([Link](#))

- Modular Forms, Arithmetic, and Women in Mathematics,  
Location: Emory University, Atlanta, Georgia. Nov 2019
  - Midwest Arithmetic Geometry and Number Theory Series 2019,  
Location: The Ohio State University, Columbus, Ohio. Oct 2019
  - 49th John H. Barrett Memorial Lectures. *Recent Developments in Number Theory*  
Location: University of Tennessee, Knoxville, TN. May 2019
  - Conference on Number Theory, Geometry, Moonshine & Strings III.  
Location: Simons Foundation, New York City, Feb 2019
  - Moonshine (Workshop) Sep 2018  
The Erwin Schrödinger International Institute for Mathematics and Physics, Vienna, Austria.
  - Vertex Operator Algebras, Number Theory and Related Topics - A conference in honor of Geoffrey Mason June 2018  
Location: Sacramento State University, Sacramento, USA.
  - Conference on Number Theory, Geometry, Moonshine & Strings II  
Location: Simons Foundation, New York City, New York. Mar 2018
  - GAGS: The Georgia Algebraic Geometry Symposium,  
Location: Georgia Institute of Technology, Atlanta, GA. Feb 2018
  - Conference on Number Theory, Geometry, Moonshine & Strings,  
Location: Simons Foundation, New York City, New York. Sep 2017
  - Georgia Algebraic Geometry Symposium  
Location: University of Georgia, Athens, GA Mar 2017
- REFeree SERVICE
- *Research in Number Theory*; ISSN: 2522-0160 (Print) 2363-9555 (Online)
  - *International Journal of Number Theory*; ISSN (Print): 1793-0421 ISSN (Online): 1793-7310
- OUTREACH & ORGANIZATION
- Co-organizer for “What is... a seminar?” 2021**  
Since Spring 2021, Alexander Clifton and I have been hosting an international virtual seminar inspired by the AMS Notices column “What is...?” Speakers give expository talks aimed at graduate students that introduce the audience to variety of mathematical objects, topics, and fields of study.
- Instructor for Emory Math Circle 2017, 2018, 2020**  
Responsibilities for this role included planning and executing lessons designed to teach Middle School-aged students problem-solving skills and think mathematically.
- Invited Speaker Dec 2021**  
Online Undergraduate Resource Fair for the Advancement and Alliance of Marginalized Mathematicians
- Invited Speaker June 2021**  
Math Summer Program for Inclusive Excellence, U of Connecticut.
- Invited Panelist at Lunch in the Time of Covid. May 2021**
- Invited Graduate Student Mentor Jan 2021**  
23rd Annual Nebraska Conference for Undergraduate Women in Mathematics.
- PROGRAMMING SKILLS
- MATLAB, Mathematica,  $\text{\LaTeX}$ , Sage, MAGMA, PARI/GP, GAP

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