



Jieru Zhu

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WORK EXPERIENCE

Postdoc

Université catholique de Louvain [09/01/2022 – Current]

City: Louvain-la-Neuve

Country: Belgium

Mentor: Pedro Vaz

Postdoc

Okinawa Institute of Science and Technology [02/01/2021 – 08/31/2022]

City: Okinawa

Country: Japan

Mentor: Liron Speyer

Representation Theory and Algebraic Combinatorics Unit

Postdoc Member

Hausdorff Institute for Mathematics [09/01/2020 – 12/18/2020]

City: Bonn

Country: Germany

Junior Trimester Program "New Trends in Representation Theory"

Group Leaders: Daniel Tubbenhauer, Paul Wedrich

Visiting Assistant Professor

University at Buffalo (State University of New York) [08/23/2018 – 08/23/2020]

City: Buffalo, New York

Country: United States

Mentor: Yiqiang Li

EDUCATION AND TRAINING

PhD, MA

University of Oklahoma [09/01/2011 – 08/01/2018]

Field(s) of study: Mathematics

Final grade: 4.0/4.0 GPA

Thesis: Two boundary centralizer algebras for $q(n)$

Advisor: Jonathan Kujawa

B.Sc

Tongji University [09/01/2007 – 07/01/2011]

Field(s) of study: Mathematics

Thesis: Notes on category theory

PUBLICATIONS

SL 2 Tilting modules in the mixed case

to appear on Selecta Mathematica

(with Louise Sutton, Daniel Tubbenhauer, Paul Wedrich)

Two Boundary Centralizer Algebras for $gl(n|m)$

to appear on Surveys in Mathematics and Applications

Tensor Representations for The Drinfeld Double of The Taft Algebra

[2022]

Journal of Algebra, Volume 606, 15 September 2022, Pages 764-797

(with Georgia Benkart, Rekha Biswal, Ellen Kirkman, Van C. Nguyen)

McKay Matrices for Finite-dimensional Hopf Algebras

[2021]

Canadian Journal of Math, 08 February 2021, pp 1-46.

(with Georgia Benkart, Rekha Biswal, Ellen Kirkman, Van C. Nguyen)

Transitioning between The Tableau and Spider Bases of The Specht Modules

[2021]

Algebras and Representation Theory, Feb 2021, pages 1-13.

(with Mee Seong Im)

Two Boundary Centralizer Algebras for $q(n)$

[2021]

Journal of Algebra, Volume 567, February 2021, pages 386-458

Quasi-split Symmetric Pairs of gl_N and Their Schur Algebras

[2020]

Nagoya Mathematical Journal. September 2020, pages 1-27.

(with Yiqiang Li)

Two Boundary Centralizer Algebras for $q(n)$

[2018]

University of Oklahoma Libraries

HONOURS AND AWARDS

Bullard Dissertation Fellowship

University of Oklahoma [08/01/2017]

This fellowship covers the stipend for the final semester of my PhD program to free me from teaching duties.

CONFERENCES AND SEMINARS

Uppsala University Representation Theory Seminar

[Virtual, 11/2022]

Hamburg University Algebra seminar

[Hamburg, 10/2022]

University of Colorado Boulder Algebra Seminar

[Virtual, 11/2021]

University of California at Santa Barbara Graduate Student Seminar

[Virtual, 11/2021]

SIAM Conference on Applied Geometry

[Virtual, 08/2021]

Minisymposium "Quantum Symmetries: Algebraic, Categorical and Topological Methods"

Algebraic Lie Theory and Representation Theory workshop

[Virtual, 06/2021]

AMS Spring Western Sectional Meeting

[Virtual, 05/2021]

Special session: Categorical and Combinatorial Methods in Representation Theory, and Related Topics

Special session: Geometric and Categorical Methods in Representation Theory

Special session: Diagrammatic and Combinatorial Methods in Representation Theory

Reed College math colloquim

[Virtual, 04/2021]

AMS Spring Central Sectional Meeting

[Virtual, 04/2021]

Special session: Interactions between Representation Theory Poisson Geometry, and Noncommutative Algebra

AMS Spring Southeastern Sectional Meeting

[Virtual, 04/2021]

University of Georgia Algebra Seminar

[Virtual, 03/2021]

AMS Joint Math Meetings

[Virtual, 01/2021]

Interactions between Noncommutative Algebra and Noncommutative Algebraic Geometry

OIST Representation Theory Seminar

[Virtual, 11/2020]

University of Oklahoma Algebra and Representation Theory Seminar

[Virtual, 04/2020]

Association for Women in Math (AWM) Symposium

[University of Houston , 04/2019]

Special Session on Homological Methods in Noncommutative Algebra and Representation Theory

AMS Spring Southeastern Sectional Meeting

[Auburn University, 03/2019]

Special session: Geometric Methods in Representation Theory.

Special session: Representations of Lie Algebras, Algebraic Groups, and Quantum Groups.

AMS Fall Western Sectional Meeting

[San Francisco State University, 10/2018]

Special session: Combinatorial and Categorical Aspects of Representation Theory.

Interactions of Low-dimensional Topology and Higher Representation Theory

[Zurich, Switzerland, 09/2018]

Southeastern Lie theory workshop X

[University of Georgia, 06/2018]

Texas-Oklahoma Representation Theory and Automorphic Forms (TORAS)

[University of Oklahoma, 04/2018]

Speed talk.

University of Colorado at Boulder Algebra Seminar

[04/2018]

University at Buffalo Algebra Seminar

[02/2018]

Joint Math Meetings

[San Diego, CA, 01/2018]

Contributed Paper Session

AMS Fall Southeast Sectional Meetings

[Orlando, FL, 09/2017]

Special Session: Categorical Methods in Representation Theory.

Fall Central Sectional Meeting

[Denton, TX, 09/2017]

Combinatorics and Representation Theory of Reflection Groups: Real and Complex.

University of Bonn Algebra Seminar

[02/2017]

Joint Math Meetings

[Atlanta, GA, 01/2017]

Contributed Paper Session

University at Buffalo Algebra Seminar

[10/2016]

International Conference on Representations of Algebras (ICRA)

[Syracuse University, 08/2016]

Southeast Lie Theory Series

[University of Virginia, 05/2016]

Algebraic Groups, Quantum Groups and Geometry

TEACHING: INSTRUCTOR OF RECORD

Introduction to Linear Algebra

[08/2019 – 12/2019]

University at Buffalo

Introduction to Linear Algebra

[01/2019 – 05/2019]

University at Buffalo

College Calculus III

[08/2018 – 12/2018]

University at Buffalo

Calculus III

[06/2017 – 07/2017]

University of Oklahoma

Calculus II

[06/2016 – 07/2016]

University of Oklahoma

Calculus II

[01/2016 – 05/2016]

University of Oklahoma

Trigonometry

[08/2014 – 12/2014]

University of Oklahoma

College algebra

[01/2014 – 05/2014]

University of Oklahoma

Precalculus

[06/2013 – 07/2013]

University of Oklahoma

Precalculus

[01/2013 – 05/2013]

University of Oklahoma

MENTORING ACTIVITIES

Geometric representation theory working group

[08/2018 – 08/2020]

University at Buffalo graduate student mentoring

Lars Gartenberg

[01/2019 – 05/2019]

Reading Course: Abstract Algebra

University at Buffalo

Joshua McDermott

[01/2016 – 05/2016]

Directed Reading Program: Lie algebras

University of Oklahoma

ORGANISATIONAL SKILLS

UCLouvain Algebraic Topology Seminar

Nov 2022 - current

co-organizers: Fathi Ben Aribi, Geoffrey Janssens

OIST Representation Theory Seminar

September 2021 - December 2021

co-organizers: Liron Speyer, Louise Sutton

Workshop: Monoidal and 2-categories in representation theory and categorification

Junior Trimester Program: New Trends in Representation Theory

Hausdorff Institute of Math, Bonn, Germany

Co-organizers: N. Gonzalez, A. Hazi, L. Sutton, D. Tubbenhauer, P. Wedrich.

December 2020

Lecture Series on Modified Trace

Junior Trimester Program: New Trends in Representation Theory

Hausdorff Institute of Math, Bonn, Germany

Co-organizers: N. Gonzalez, A. Hazi, L. Sutton, D. Tubbenhauer, P. Wedrich.

October 2020

Texas-Oklahoma Representations and Automorphic Forms Student Conference

Co-organizers: J. Merlini, M. Molander, H. El Turkey, S. Turki.

University of Oklahoma

March 2015

University of Oklahoma Student Algebra Seminar

September 2014 - May 2015

COLLABORATION WORKSHOPS

AIM SQuaREs workshop

[2020 – 2023]

American Institute of Math, Structured Quartet Research Ensembles

Collaborators: Nicholas Davidson, Jonathan Kujawa, Robert Muth

IAS Summer Collaborators program

[06/2019]

Institute of Advanced Studies

Collaborators: Mee Seong Im, Chun-Ju Lai, Arik Wilbert

WINART 2 Workshop

[05/2019]

Women in Noncommutative Algebra and Representation Theory

University of Leeds

Presenter of the final group report

Collaborators: Georgia Benkart, Rekha Biswal, Ellen Kirkman, Van Nguyen

VOLUNTEERING

IAS Women and Mathematics

[Virtual, 05/2021]

Representation Theory: Categories and Combinatorics

Group discussion leader

MSRI Connections for Women

[Berkeley, CA, 02/2020]

Higher Categories: Creating Space for Yourself and Others

Panelist

JOURNAL REFEREE

Surveys in Mathematics and its Applications

Proceedings of AMS

Journal of Pure and Applied Algebra

Journal of Algebra

Algebras and Representation Theory

International Mathematics Research Notices

MANAGEMENT AND LEADERSHIP SKILLS

OU Center for Teaching Excellence Workshop

Endorsement in Preparation for Teaching Undergraduate Mathematics

University of Oklahoma Department Certificate

Six Credit Hours in Math Education

OU LGBTQ Sooner Alley Session

POSTER PRESENTATIONS

MSRI Connections for Women: Quantum Symmetries

[01/2020]

Followed by a 10 minute talk.

AWM Poster Session at Joint Math Meetings

[01/2018]

Categorification, Representation Theory and Symplectic Geometry

[11/2017]

Hausdorff Research Institute for Math (HIM) Winter School

Trimester program

Followed by a short talk

Texas-Oklahoma Representation Theory and Automorphic Forms (TORA)

[03/2016]

University of North Texas

Followed by a speed talk.

LOCAL TALKS

Joint seminar between VUB and UCL

[10/2022]

Vrije Universiteit Brussel, Université catholique de Louvain

"Superalgebra deformations of the web categories"

OIST Learning Seminar

[03/2022 – 07/2022]

"Introduction to Soergel bimodules"

By Ben Elias, Geordie Williamson

OIST algebraic combinatorics and representation theory unit

Mar: Soergel's categorification theorem

May: Ch. 12 How to draw Soergel bimodules

July: A lightning introduction to perverse sheaves

OIST Learning seminar

[10/2021 – 12/2021]

"Projective Representations of the Symmetric Groups: Q-Functions and Shifted Tableaux"

By Hoffman and Humphreys

OIST representation theory and algebraic combinatorics unit

Oct: Chapter 5 Star tensor product

Dec: Chapter 9 Explicit Q functions

OIST Learning Seminar

[05/2021 – 07/2021]

"Linear and projective representations of symmetric groups"

by Alexander Kleshchev

OIST representation theory and algebraic combinatorics unit

May: Chapter 9 Grothendieck groups

July: Chapter 13 Sergeev algebras

HIM Learning seminar

[09/2020]

Hausdorff Institute of Mathematics, Junior Trimester Program

Learning seminar on tilting modules

Introduction to Gradescope

[05/2019]

University at Buffalo

Algebra and Representation Theory Seminar

[03/2017]

University of Oklahoma

Graduate Student Seminar

[11/2016]

University of Oklahoma

Research in Undergraduate Mathematics Education Seminar

[09/2016]

University of Oklahoma

Student Algebra Seminar

[09/2016]

University of Oklahoma

Student Algebra Seminar

[11/2015]

University of Oklahoma

Student Algebra Seminar

[04/2015]

University of Oklahoma

Student Algebra Seminar

[03/2015]

University of Oklahoma

Algebra and Representation Theory Seminar

[11/2014]

University of Oklahoma

Student Algebra Seminar

[08/2014]

University of Oklahoma

Student Algebra Seminar

[05/2014]

University of Oklahoma

Student Algebra Seminar

[02/2014]

University of Oklahoma

Student Algebra Seminar

[01/2014]

University of Oklahoma

Student Algebra Seminar

[10/2013]

University of Oklahoma

LANGUAGE SKILLS

Mother tongue(s): **Mandarin**

Other language(s):

Japanese

LISTENING B1 READING B2 WRITING B1

SPOKEN PRODUCTION A2 SPOKEN INTERACTION A2

German

LISTENING A1 READING A1 WRITING A1

SPOKEN PRODUCTION A1 SPOKEN INTERACTION A1

English

LISTENING C2 READING C2 WRITING C2

SPOKEN PRODUCTION C2 SPOKEN INTERACTION C2

Cantonese

LISTENING C1 READING C1 WRITING B2

SPOKEN PRODUCTION B1 SPOKEN INTERACTION B1

DIGITAL SKILLS

Programming Languages: C, C++, Python, Matlab / MAGMA