

# Hanzhang Yin

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## Education

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<b>University of Kansas</b> <i>Doctor of Philosophy, Mathematics</i>	August 2023 – Present <i>Lawrence, KS, USA</i>
<b>University of Connecticut</b> <i>Bachelor of Arts, Mathematics</i>	August 2019 – May 2023 <i>Storrs, CT, USA</i>

## Research Experience

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<b>Undergraduate Research on Combinatorics</b> <i>University of Connecticut</i> <ul style="list-style-type: none"><li>Carried out in-depth investigations on the homomesy properties of the toggling of dominant sets in path graphs.</li><li>Utilized Sagemath software to gather and examine the gathered data.</li><li>Mentor: Thomas Roby &amp; Matthew Plante</li></ul>	September, 2022 – Present <i>Storrs, CT, USA</i>
<b>Applied Mathematics Research Program for Undergraduates (AMRPU)</b> <i>Florida International University</i> <ul style="list-style-type: none"><li>Conducted research on the Domination Number of the Cartesian Product of Complete Graphs.</li><li>Utilized python to generate data and regularly reported progress in weekly updates.</li><li>Mentor: Walter Carballosa Torres &amp; Justin Wisby.</li></ul>	May, 2022 – July, 2022 <i>Miami, FL, USA</i>
<b>Direct Reading Project</b> <i>University of Connecticut</i> <ul style="list-style-type: none"><li>Engaged in independent study of combinatorial topics with the support of a graduate student mentor.</li><li>Delivered weekly presentations to showcase learning progress and insights.</li><li>Mentor: Matthew Plante.</li></ul>	September, 2021 – May, 2022 <i>Storrs, CT, USA</i>

## Publication (In Preparation)

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(with L. Busch, G. Silewski, W. C. Torre, and J. Wisby) "Domination Number of Cartesian Product of Complete Graphs" [https://www.researchgate.net/publication/366168241\\_DOMINATION\\_OF\\_CARTESIAN\\_PRODUCT\\_OF\\_COMPLETE\\_GRAPHS](https://www.researchgate.net/publication/366168241_DOMINATION_OF_CARTESIAN_PRODUCT_OF_COMPLETE_GRAPHS) (preprint)

## Presentations & Talks

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- University of Connecticut, 2023 Frontier Preparation, Storrs, CT, "Domination Number of Cartesian Product of Complete Graphs", 14 April 2023
- University of Utah, AMS Fall Western Sectional Meeting, Salt Lake City, UT, "Domination Number of Cartesian Product of Complete Graphs", 22 October 2022
- Florida International University, AMRPU Presentation, Miami, FL, "Using Chessboards to investigate an Unsolved Conjecture in Graphs", 15 July 2022
- University of Connecticut, Direct Reading Project Presentation, Storrs, CT, "Some Topics in Algebraic Combinatorics (Young Tableaux)", 10 May 2022
- University of Connecticut, Direct Reading Project Presentation, Storrs, CT, "Some Topics in Algebraic Combinatorics (Count Walks on Graphs)", 16 December 2021

## *Work Experience*

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### **The Ross Mathematics Program**

June, 2023 – July, 2023

*The Math Counselor*

*Terre Haute, IN, USA*

- Served for the students who needs help with Elementary Number Theory.
- Graded students' problem sets and provided instructive feedbacks.
- Held daily meeting of 6-member group to strengthen student's understanding of advanced mathematical concepts.

### **University of Connecticut Quantitative Learning Center**

March, 2022 – April, 2023

*Mathematics Tutor*

*Storrs, CT, USA*

- Served for the students who needs help with calculus homework and exams.
- Reviewed learning schedule and supplied guidance for class curriculum.
- Held a one-to-one study session with students to answer their mathematical questions.

### **University of Connecticut Department of Mathematics**

January, 2023 – April, 2023

*Mathematics Grading Specialist*

*Storrs, CT, USA*

- Reviewed students' homework and checked for accuracy and completeness.
- Ensured that grading is done in a consistent and fair manner, following the guidelines and standards set by the teacher or institution.

## *Volunteer Experience*

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### **Brain Ventricle Project**

September, 2021 – December, 2021

*Connecticut Children's*

*CT, USA*

- Identified, scanned, and labeled the ventricles from hundreds of CT images for training artificial intelligence.
- Assigned work to co-workers and discussed how to eliminate mistakes from scanning.
- Reviewed the progress of volunteers, rearranged their works, and collected and organized data for analysis.

## *Awards & Honors*

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### **Conference Presentation Awards**

*University of Connecticut*

*October 2022*

### **2021 New England Scholar**

*University of Connecticut*

*Spring & Fall 2021*

### **Dean's List**

*University of Connecticut*

*Spring & Fall 2021*

## *Specialized Skills*

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**Applications:** VScode, Visual Studio, Google Sheets, SQLite, R studio, Jupyter Notebook, GitHub

**Programming Languages:** Unix, Python, R, SQL, Sagemath, L<sup>A</sup>T<sub>E</sub>X, HTML, CSS, C# Lean4

**Languages:** English (Fluent), Chinese (Native-speaker)