

# Hanzhang Yin

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959-929-5263

## Education

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### University of Connecticut

*Bachelor of Arts, Mathematics (Expected May 2023)*

August 2019 – Present

Storrs, CT, USA

## Research Experience

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### Undergraduate Research on Combinatorics

September, 2022 – Present

*University of Connecticut*

Storrs, CT, USA

- Researched on Homomorphism Properties on the Toggling of Dominating Sets of Path Graphs.
- Generated and analyzed data in Sagemath.
- Mentor: Thomas Roby & Matthew Plante

### Applied Mathematics Research Program for Undergraduates (AMRPU)

May, 2022 – July, 2022

*Florida International University*

Miami, FL, USA

- Researched on Domination Number of Cartesian Product of Complete Graphs.
- Generated data in python and report progress weekly.
- Mentor: Walter Carballosa Torres & Justin Wisby.

### Direct Reading Project

September, 2021 – May, 2022

*University of Connecticut*

Storrs, CT, USA

- Self-studied topics in combinatorics under a graduate student's guidance.
- Prepared weekly presentations.
- Mentor: Matthew Plante.

## 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 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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### University of Connecticut Quantitative Learning Center

February, 2021 – March, 2021

*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.
- Discussed common math questions that students asked and prepared review sessions.

## *Volunteer Experience*

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### **Brain Ventricle Project**

September, 2021 – May, 2022

*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.

## *Leadership & Involvement*

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### **UConn Student Union**

August, 2021 – Present

*Building Operation Assistant & Event Manager & Ambassador*

*Storrs, CT, USA*

- Served for the attendees of the events at the Student Union.
- Managed different departments which solved problems and handled accidents.
- Managed students' activities and monitored events on campus.

## *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:** MS Excel, MS Word, Google Sheets, Google Docs, R studio, Jupyter Notebook, Github

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

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