JESSE CAMPBELL

321·732·9362 ◇ jessecampbell517@gmail.com ◇ My website

Education

Duke University/Duke Kunshan University (Dual-Degree) **Aug. 2021 – May 2025**
B.Sc. Applied Mathematics and Computational Science *Summa Cum Laude, GPA: 3.93/4.00 (Top 5%)*

University of Illinois at Chicago **Aug. 2025 – May 2027**
M.S. Mathematical Computer Science

Technical Skills

Programming Languages Python, Java, C, SQL, Mathematica, Julia, LaTeX ROOT
Languages English (Native), Mandarin (Advanced), Spanish (Intermediate)

Peer-Reviewed Publications

1. Jesse Campbell and Chunjiang Zhu. Differentially private counting queries on approximate shortest paths. In *Combinatorial Optimization and Applications: 17th International Conference, COCOA 2024*, Beijing, China, Dec. 2024., Lecture Notes in Computer Science, vol 15434. Springer.

Professional Experience

Teaching Assistant *University of Illinois, Chicago* **August 2025 – Present**
- Awarded teaching assistantship from the Department of Math, Computer Science and Statistics to lead discussion sections and grading assignments for undergraduate mathematics courses.

Software Testing Team Intern *KONE Elevators China* **May 2023 – August 2023**
- Diagnosed the internal API and integrated with database coded in SQL by personally writing over 100 automation scripts in Python using modules such as Selenium to simulate browser actions.
- Completed internship totally in Mandarin, Chinese.

Research Projects

Chromatic Symmetric Functions *Undergraduate thesis* **Jan. 2023 – Apr. 2025**
↪ Dr. Italo Simonelli *Duke Kunshan University*
- Completed 40-page undergraduate thesis studying a 30-year open problem in algebraic combinatorics, and giving new approach to its proof. Received Distinction for the profound contribution of my thesis to the problem.

Differentially Private Algorithms *NSF REU participant* **May 2024 – Aug. 2024**
↪ Dr. Chunjiang Zhu *Univesity of North Carolina at Greensboro*
- Member of inaugural UNCG GRALNA REU cohort. Studied differentially private release of global graph properties, sourcewise- and collective tree- graph spanner constructions, hypergraph isomorphism problem.

GNNs for dRICH Classification *Research assistant* **May 2022 – Aug. 2022**
↪ Dr. Anslem Vossen *Duke University*
- High energy physics 101 (HEP 101) cohort. Designed message passing graph neural network for classification of particles based on simulation dual ring-imaging Cherenkov detector (dRICH) data.

Honors and Awards

CRA NSF REU Travel Award Awarded travel grant for $1200 from the Computing Research Association in Washington D.C. to showcase research at COCOA 2024 conference in Beijing, China. **Nov. 2024**

DKU Dean's List (with Distinction) Recognition for a GPA within top 10% of class **Multiple Semesters**

DKU Undergraduate Entrance Scholarship 85% merit scholarship for demonstrating "the ability to think critically, creatively, and globally" **Aug. 2021**

Seminars & Teaching

DKU Discrete Mathematics Seminar *Co-organizer and presenter* **Jan. 2023 – May 2025**
- *Beford's Law: Properties, applications, and questions* (presentation, Spring 2023)
- *Finite Calculus: A simple tool for evaluating complex sums* (presentation, Fall 2023)
- *Differentially Private Release of Range Queries on Graphs.* (presentation, Fall 2024)

Teaching Assistant
- Discrete Math for Computer Science (DKU, Spring 2024 and Spring 2025)
- Probability and Statistics (DKU, Spring 2025)

Extracurricular Experience

DKU Jazz Club *Founder and president* **Aug. 2022 – May 2025**