

Chicago, IL  
GitHub: [mamir4](#)

# Malaeka Amir

LinkedIn: [Malaeka Amir](#)  
[mamir4@depaul.edu](mailto:mamir4@depaul.edu)

## EDUCATION

**DePaul University | B.S. in Computer Science (Software Engineering), minor in Mathematics** Chicago, IL  
**GPA: 4.0/4.0 | Dean's Honor List (every quarter in attendance)** *Expected Winter 2026*  
**Involvement:** Computer Science Society, DePaul Artificial Intelligence, HerCDM, Math Team

## EXPERIENCE

**DePaul College of Science and Health** Chicago, IL  
*Research Assistant – Computational & Statistical Mechanics* August 2024 – June 2025

- Built Python simulations using Markov Chains to map the 6-vertex model and interpret complex results and patterns, under the mentorship of Dr. Karl Liechty, Associate Professor and Associate Chair of Mathematical Sciences
- Optimized simulation performance and addressed technical challenges, validating findings through rigorous testing involving statistical analysis, Markov Chain Monte Carlo methods, and probability modeling

*Mathematics Tutor* April 2024 – June 2025

- Improved performance for 86% of students and enhanced their understanding of Calculus and Discrete Mathematics by simplifying complex concepts and adapting teaching methods to individual learning styles

**DePaul Center for Teaching and Learning** Chicago, IL  
*Supplemental Instruction Leader – Data Structures* April 2025 - Present

- Enhanced technical skills and problem-solving abilities of over 30 students by delivering structured, interactive sessions on linked lists, stacks, trees and more, reflected in student feedback and improved exam performance

**DePaul Office of Multicultural Student Success** Chicago, IL  
*Academic Peer Advisor* August 2024 – Present

- Advanced the development of over 50 first-year students through targeted one-on-one mentoring and workshops on critical skills such as time management and study techniques, enhancing academic performance and personal growth
- Developed a database of academic and wellness resources, refining student access and communication with staff

## PROJECTS

**Research – Amir, M. (2025).** [Exact Sampling of the Six-Vertex Model Using Coupling from the Past](#)

Achieved exact sampling of the six-vertex model and proved monotonicity constraints by implementing Python simulations using Coupling from the Past, and analyzing statistical behavior under domain wall boundary conditions

**Currency Converter – JavaScript (React + Vite)**

Built a responsive web app for real-time currency conversion using live exchange rate API. Implemented currency swapping, dynamic inputs, and optimized performance with React hooks and Vite

**Lottoaway – JavaScript**

Developed and deployed a dynamic, browser-based lottery game using HTML, CSS, and JavaScript, featuring animated interactions, sound effects, and real-time game logic

**Restaurant Profiling – SQL**

Retrieved restaurants' data using SQL queries to find the correlation between the location of the business and its reviews and determined which restaurants were currently open/closed for business by transforming and integrating data from multiple tables to extract information about customer ratings

**10tative™**

Led a team of seven in designing eco-friendly smart eyewear, developed a Business Model Canvas capturing value propositions and revenue streams, and delivered a compelling investor pitch

## SKILLS & INTERESTS

**Programming:** Python, SQL, Java, JavaScript, TypeScript, C++, C, React, Vite, Scala, CSS, HTML, Excel VBA

**Tools:** Microsoft Office, Tableau, Power BI, Git, Illustrator, Photoshop, Lightroom, Canva, Oracle

**Languages:** Fluent in English, Hindi, Urdu | Basic proficiency in Spanish

**Hobbies:** Pickleball, Photography, Reading, Kickboxing