

Malaeka Amir

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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 Fall 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

- Designed and implemented Python simulations using Markov Chains to map the 6-vertex model and interpret complex results and patterns, applying data modeling, algorithm optimization, and statistical analysis
- Improved simulation performance and resolved technical challenges, validating findings through rigorous testing, 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 leveraging problem decomposition and algorithmic thinking for diverse learners

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

- Led interactive sessions for 30+ students on linked lists, stacks, trees, and algorithms, creating Java-based coding exercises and API practice problems, reflected in positive student feedback and improved exam performance

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

- Mentored 50+ first-year students through targeted one-on-one sessions and workshops on time management, study strategies, and problem-solving, improving academic performance and adaptability.
- Designed and maintained a centralized database of academic and wellness resources, streamlining data access and communication between students and 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

Queried and integrated multi-table restaurant datasets to assess location-review correlations and operational status, applying data transformation and relational database techniques

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