

# Harsh Desai

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## EDUCATION

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### University of Illinois Chicago

B.S. Computer Science

Relevant Coursework: Data Structures, Discrete Math, Differential Equations, Linear Algebra, Languages & Automata, Machine Organization, Computer Design, Programming with C/C++

*Expected May 2027*

## TECHNICAL SKILLS

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**Languages:** Python, Java, C++, C, JavaScript, HTML/CSS, Swift, SQL, Lua, C#, Qiskit

**Frameworks & Tools:** React, Next.js, Spring Boot, MongoDB, Git/GitHub, Jupyter Notebook, Qbraid, XCode, Unity, IntelliJ, VS Code

## EXPERIENCE

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### Quantum Algorithms Researcher | University of Illinois Chicago Aug 2025 – Present

- Improved simulation efficiency by investigating Jordan-Wigner vs. Bravyi-Kitaev transformations, targeting reduced circuit complexity while maintaining equivalent time-control accuracy.
- Designed experimental frameworks in Qiskit to benchmark qubit mapping approaches across multi-qubit quantum systems.

### Quantum Hardware Researcher (GPIP) | University of Illinois Chicago Summer 2025

- Increased measurement accuracy by 100% across variable configurations by building Python scripts to compute expectation values for Quantum Harmonic Oscillators and multi-qubit systems.
- Analyzed behavioral shifts in Quantum Harmonic Oscillators under both incremental and drastic variable changes, producing reproducible experimental results.

### Lead Coding Instructor (Sensei) | Code Ninjas, Long Grove 2022 – 2024

- Mentored 50+ students in coding, debugging, and game development using Lua and JavaScript, increasing student project completion rates.
- Led a team of instructors by establishing collaborative decision-making processes, improving team cohesion and lesson consistency across sessions.

## PROJECTS

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### CurtainCall | Next.js, React, Spring Boot, MongoDB Feb 2026

- Built a full-stack platform for artists in the musical arts field, featuring a Tinder-style connection system, endorsements, and a network graph visualizing user connections — enabling discovery for lesser-known performers.

### SnapLink | React, Spring Boot, MongoDB, Google Maps API Feb 2025

- Engineered a full-stack job-discovery platform for small businesses and local job-seekers, integrating the Google Maps API to surface geo-tagged tasks based on the user's real-time location.

### Lucky D's Gaming Cafe Website | React, WebStorm June 2022

- Independently built and deployed a production business website for a local gaming café, including domain registration and hosting, driving in-person customer exploration before visits.

## AWARDS & LEADERSHIP

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- IBM Quantum Badge of Excellence – Completed all labs in the Qiskit Global Summer School 2025 with 100% accuracy.
- Freshman Mentor Program – Selected as 1 of 100 mentors from a pool of 2,000 applicants; recognized as one of the program's top mentors by program leadership.