

# SHAMBHAVI GOYAL

Buffalo, NY 14260, USA | (716) 580-0656 | [sgoyal3@buffalo.edu](mailto:sgoyal3@buffalo.edu) | [www.linkedin.com/in/shambhavigoyal](https://www.linkedin.com/in/shambhavigoyal)

## EDUCATION

- University at Buffalo, The State University of New York** (Anticipated May 2026)  
**Computer Science (BS), Honors College**  
*Activities:* Member of the Leadership House and Women in Science and Engineering

## RELEVANT COURSEWORK

Python Programming, Object Oriented Programming, Systems Programming, Data Structures & Algorithms, Computer Architecture, Algorithms & Complexity

## PERSONAL PROJECTS

### **Responsive Personal Portfolio Website (HTML, CSS, JavaScript)** (December 2024)

- Designed a responsive personal portfolio website with a clean, modern interface, emphasizing user experience and mobile compatibility.
- Implemented dynamic features such as smooth scrolling, modal pop-ups, and form validation to enhance user interaction.
- Optimized website performance with CSS Flexbox and Grid for a fluid layout across devices, improving page load times.

### **Conway's Game of Life with Hardware Logic Circuit (C++, Arduino, NPN Transistors)** (November 2024)

- Developed a hybrid software-hardware system for Conway's Game of Life, integrating an Arduino microcontroller with custom-built logic circuits (AND, OR, NOT gates using NPN transistors) to simulate cellular automata.
- Programmed the microcontroller to calculate cell states based on neighbouring cells and control LED displays to visualize the simulation in real-time.
- Overcame challenges in circuit design, voltage regulation, and hardware-software synchronization, gaining hands-on experience in embedded systems and digital logic.

### **Bank Application (Java)** (June 2024)

- Created a banking application to simulate essential banking operations, including account management and transactions.
- Built functionalities and integrated transaction capabilities for depositing, withdrawing, and viewing transaction history.
- Designed a user-friendly menu-driven interface for seamless navigation and operation.

## WORK EXPERIENCE

### **Math Place Tutor- Thomas J. Edwards Undergraduate Learning Center** (May 2024-Present)

- Provided support and tutoring to 100+ students in Precalculus, Calculus 1 & 2, Algebra, and Business Math courses.
- Helped students understand math concepts, fostering strong fundamentals and promoting independent learning.

### **Undergraduate Teaching Assistant: Discrete Structures** (Jan 2024- Present)

- Assisted with course material delivery and provided academic support through 20+ office hours, helping students understand complex topics in discrete mathematics.
- Graded assignments and exams, providing detailed feedback to enhance student comprehension and performance.

### **Resident Advisor- Campus Living** (August 2024- Present)

- Guided and supported 30 Honors College students with tailored academic, personal, and career advice, contributing to their overall success.
- Partnered with fellow RAs and campus living staff to create and implement community-building events, activities, and educational programs.

### **Undergraduate Teaching Assistant: CSE 199** (May 2024- Dec 2024)

- Conducted weekly recitations covering modules of misinformation, digital data representation, data mining, computing ethics, internet infrastructure, and privacy.
- Assisted in grading assignments to uphold academic standards and provide constructive feedback.

## SKILLS & TOOLS

- Programming Languages:** C, Java, Python, JavaScript, HTML, CSS, SQL
- Frameworks & Libraries:** Node.js, React, Bootstrap, Tailwind CSS
- Databases:** MySQL
- Version Control:** Git, GitHub
- Development Environments:** Emacs, Visual Studio Code, IntelliJ IDEA, PyCharm, Eclipse, Sublime Text
- Operating Systems:** Linux, Windows