Shambhavi Goyal

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Education

University at Buffalo, The State University of New York *Aug 2023- May 2027*
BS in Computer Science, Honors College

- GPA: 3.9/4.0
- **Honors:** Dean's List (Fall 2023, Spring 2024, Fall 2025), UB Flagship Scholar, Women Empowerment Scholar
- **Coursework:** System Programming, Computer Architecture, Data Structures, Algorithms, Object-Oriented Programming, Python Programming
- **Activities:** Member of the Leadership House and Women in Science and Engineering

Skills

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

Projects

Instant Messenger Application *Dec 2024*

- Built a real-time messaging app in C using client-server architecture with TCP sockets, supporting 100+ concurrent users.
- Implemented serialization in C to reduce message payload size by 30% and optimized transmission efficiency.
- Tested system with 1,000+ message exchanges to validate accurate delivery, low latency, and robust client-server interaction.

Conway's Game of Life with Hardware Logic Circuit *Nov 2024*

- Built a hybrid software-hardware system using Arduino UNO R4 and custom logic gates (AND, OR, NOT) with NPN transistors.
- Solved key challenges in voltage regulation and synchronization between hardware and software, gaining hands-on embedded systems experience.

Experience

Math Tutor *Buffalo, NY*
Math Place- Thomas J. Edwards Undergraduate Learning Center *Sep 2024- Present*

- Tutored 100+ students in Advanced Calculus, Linear Algebra, and Business Math, helping strengthen fundamentals and boost academic performance.
- Adapted teaching strategies to support independent learning across diverse skill levels.

Undergraduate Teaching Assistant: Discrete Structures & UB Seminar *Buffalo, NY*
CSE Department *Aug 2024 – Present*

- Led 20+ hours of academic support sessions to simplify complex concepts in discrete math.
- Graded coursework and provided detailed feedback, improving student understanding and engagement.

Resident Assistant *Buffalo, NY*
Campus Living *May 2024 – Present*

- Supported 30 Honors students with academic and personal advising; facilitated events to build a strong, inclusive living-learning community.
- Coordinated with RAs and campus staff to plan programs focused on wellness, career, and peer support.