

Swayam Bansal

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OBJECTIVE

Highly motivated junior studying Computer Science at Penn State University, with a strong passion for mathematics and a dedicated commitment to continuous learning and growth looking for opportunities as an inter this summer of 2024

EDUCATION

The Pennsylvania State University, University Park

Aug. 2021 – May 2025

Bachelor of Science in Computer Science, Minor in Mathematics

GPA: 3.75

Honors and Awards: Dean's List(Fall 21 - Spring 23); MCREU scholarship; Member of Capital College Honors program

TECHNICAL SKILLS

Languages: C/C++, Java, Python, SQL, HTML/CSS, JavaScript

Developer Tools: Git, VScode, Clion, JetBrains Toolkit

Relevant Courses: Object Oriented Programming, Discrete Mathematics, Probability, Differential Equations, Intermediate C++

PROJECTS

Tic-Tac-Toe AI | C++

- Developed a Tic-Tac-Toe artificial intelligence system in C++ featuring three distinct difficulty settings: Easy, Medium, and Impossible
- Implemented the Mini-Max algorithm augmented with backtracking techniques for algorithmic decision-making

Simple ASCII Roguelike | C++

- Designed and developed a multi-level roguelike game, incorporating a simulated object avoidance algorithm
- Developed a comprehensive shopping menu and a sophisticated 1D combat simulator as integral features within the game

EXPERIENCE

Undergraduate Research Assistant

June 2023 – Present

Pennsylvania State University, Dr. Sukmoon Chang

Harrisburg, PA

- Developed a simple particle collision system
- Developed the GUI interface in C++ using SDL2, OpenGL and STL libraries
- Explored the implementation methodologies of CFDs, discerning key distinctions from the principles governing real-world fluid mechanics at nano-scale

PSU Maths Club, Harrisburg

Aug 2021 – May 2023

Executive Board, Secretary

Aug 2022 – May 2023

- Planned, orchestrated, and directed 12+ workshops and club gatherings, including the coordination and hosting of an Integration Bee event for club members
- Liaised with College of Science faculty members to arrange and facilitate 3 workshops focusing on Knot Theory, Astronomy, and Infinite Summations
- Engaged with students and faculty to boost club visibility, resulting in a 40% increase in membership

Math Tutor

Aug 2023 – Present

Pennsylvania State University

University Park, PA

- Instructed mathematical concepts encompassing algebra, pre-calculus, and calculus at various levels, from Math 026 to Math 141
- Dedicated 5-10 hours per week to scheduled office hours as part of job requirements
- Facilitated consistent grade advancement for tutees, elevating their academic standing by one level on average

INVOLVEMENTS

IEEE, PSU Harrisburg: Attended the workshops for Arduino and Soldering

Google Developer Student Club: A regular member of the club

Quantitative Finance Society: A regular member of the club