ROMAN VICTOR SALLY

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EDUCATION

University of Notre Dame | Notre Dame, IN — May 2025
***Bachelor of Arts,* Majors:** Computer Science, Design — GPA: 3.5
Summer Engineering | Dublin, Ireland — May 2023 – July 2023
Coursework: Algorithms, Data Structures, Systems Programming, Embedded Systems, Game Development, Theory of Computing

WORK EXPERIENCE

Human-Computer Interaction Research Intern — January 2024 – Present
- Developed a WhatsApp chatbot with Python, Flask, and Meta Cloud API to provide AI-driven grocery recommendations.
- Configured webhooks for secure message handling, integrating ngrok for public exposure and validating webhook events.
- Utilized OpenAI API for personalized responses and optimized product suggestions based on user shopping lists and goals.

Fundamentals of Computing Teaching Assistant — August 2023 – Present
- Guided 200+ students in basic C programming, data structures, object-oriented design, and tools (Vim, VSCode, Linux)
- Facilitated office hours that enhanced students' practical skills, problem-solving ability, and algorithmic understanding.

Building Bridges Computer Science Mentor — July 2023 – Present
- Mentored 23 students of color biweekly, fostering academic and professional success through connections with experienced alumni, professors, and 11 industry partners, resulting in 8 internship placements.
- Provided skill development and tailored class advice, enhancing study habits and facilitating networking opportunities, leading to a 7% GPA increase across all mentees.

TECHNICAL EXPERIENCES

ND Video Game Club | Notre Dame, IN — March 2023 – Present
Vice President
- Led a team of 8 developers in the creation of a 2D action-adventure dungeon crawler in Unity using C#, specializing in intricate enemy object movement, and guiding team members in code optimization and game mechanic design.
- Implemented an AI-driven enemy movement system using A* pathfinding for grid-based navigation, dynamically calculating speed, distance, and direction for optimized attacks.
- Mentored club members in the implementation of procedural level generation algorithms, integrated character animations for enhanced user experience, collision detection, and developed a custom physics engine to simulate realistic movements.

CS for Good | Notre Dame, IN — September 2022 - Present
DePaul Academy Coding Club Project Leader
- Partnered with DePaul Academy staff to craft a coding curriculum for over 40 male students (ages 14-18) facing challenges like delinquency, mental health issues, and trauma.
- Recruited and trained 18 Notre Dame students to teach Python, HTML, and CSS basics, in a positive and inclusive team.

Unmanned Aerial Vehicle (UAV) ND | Notre Dame, IN — September 2022 – Present
Computer Science Sub-Team Member
- Conceptualized and developed a UAV with advanced capabilities, including autonomous flight navigation, remote sensing, and execution of tasks such as object detection, movement awareness, and object control.
- Designed a comprehensive framework in C for mapping functionalities, alphanumeric recognition, and autonomous navigation using detailed calculations to ensure precise execution of UAV tasks.

Student International Business Council (SIBC) | Notre Dame, IN — September 2021 – May 2022
Raytheon Project Leader
- Co-led a STEM project for Pratt and Whitney, researching Agile project management tools for implementation.
- Mentored a team of 14 members in presentational and PowerPoint skills, collaborative work, and content development.

TECHNICAL PROJECTS

Samurai Sai — July 2024 – Present
- Developed a 3D open-world samurai combat game in Unity, utilizing advanced shaders, dynamic lighting, and procedural animation with inverse kinematics.
- Implemented adaptive AI using behavior trees and finite state machines to enhance combat mechanics and hit detections.
- Crafted an immersive game environment utilizing Unity's asset suite, including the creation of 3D Terrain Objects, application of ground textures, and integration of a dynamic SkyBox with global volume post-processing.

Movie Insights Website — December 2023
- Analyzed 1600+ movies from a CSV file with Python, fetching data using GET requests.
- Derived 6 key insights, including General Overview, Movie Length vs. Popularity, and Most Popular Directors.
- Utilized Python libraries (NumPy, pandas, matplotlib.pyplot) for data manipulation, correlation analysis, and visualization.

TECHNICAL SKILLS & CAMPUS ACTIVITIES

Technical: Python | Java | JavaScript | HTML | CSS | C | C++ | C# | Linux | Unity | PowerPoint | Maya | Blender | Adobe Photoshop
Activities: National Society of Black Engineers, IrishSat, Black Student Association, Wabruda, ColorStack, Interhall Sports