

Rahul Vudaru *Software Engineer*

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Education

Bachelors of Science in Computer Science,

08/2019 – 05/2022 | Bloomington, Illinois

Illinois Wesleyan University

Emphasis on software development with a strong foundation in C++ programming. Completed additional coursework in Assembly, Python, and HTML, building skills in both low-level and high-level programming.

Projects:

- **Typo** (*HTML, CSS, Bootstrap, JavaScript, Flask, SQL*) - Developed a responsive web application that helps users improve their typing skills by practicing with various phrases.
- **City Population & Latitude Analysis** (*Python, Pandas, Matplotlib*) - Conducted data analysis in Google Colab to explore how city populations vary by latitude. Utilized Pandas for data cleaning and transformation, and Matplotlib for visualizing population trends across geographic regions. Interpreted patterns and summarized insights in a written report.
- **Snake** (*x86 Assembly*) *Team Project* – Collaborated with classmates to develop a fully functional version of the classic Snake game using x86 Assembly. Handled low-level memory management, input handling, and graphics rendering through direct interaction with system interrupts.

Professional Experience

Software Engineer, VirtuSense Tech

06/2023 – 08/2025 | Peoria, Illinois

- Initially developed backend systems and automation tools using Python, focusing on data processing and integration tasks.
- Transitioned to C++ development, working primarily on computer vision applications utilizing OpenCV and YOLO models for real-time object detection and analysis.
- Worked in an Agile environment with two-week sprints, collaborating cross-functionally to deliver features and fixes.
- Authored Technical Requirements Documents for each new feature or bug fix to ensure clear, thorough specifications and alignment across teams.
- Used Git for version control, enabling efficient code management and collaboration.

Projects:

- **IssueSys** (*Python*) - Developed a Python monitoring tool for a high-volume firehose server streaming data from hundreds of sensors. Implemented a dictionary to map MAC addresses to specific sensors to handle sensor reuse. The tool detected faulty or irregular calls and automatically sent real-time alerts to a Microsoft Teams channel, improving issue detection and response times.
- **Betsy AI Assistant** (*Python, Node.js, HTML, React*) - Built a virtual AI assistant for hospital patients using PicoVoice as the voice activation software, OpenAI Whisper to process voice to text, and GPT to process text and generate a response, and React/Node.js to provide a user interface to enhance patient support and communication.
- **Pressure Injury Detection** (*C++*) - Developed a real-time monitoring system using a custom-trained YOLO model on IRIRD images to classify patient positions (supine, left, right, sitting). The system tracked how long a patient remained in a single position, communicating with a server-hosted timer. It sent “start” and “reset” messages based on positional changes, and triggered an alert state if the timer expired — enabling proactive intervention to prevent pressure ulcers.

Skills

Technical Skills: Python, C++, C, JavaScript, Java, Assembly, SQL, Bash, Node.js, React, OpenCV, YOLO, Git, Flask, Pandas, Matplotlib, NumPy, Seaborn, PyTorch, Linux, Agile, Docker, Nginx, Postman, Google Colab, HTML/CSS