Jay Rao

(475)-225-5010 | jayrao2028@u.northwestern.edu | linkedin | github | jayrao.me

EDUCATION

Northwestern University   June 2028
Bachelor's Degree in **Computer Science**   Concentration in **Artificial Intelligence**
- **Courses:** Fundamentals of Computer Programming (I, 1.5, II), Data Structures & Algorithms, Linear Algebra, Probability
- **Organizations:** Men's Rugby, Develop + Innovate for Social Change, The Garage @ Northwestern

SKILLS

Languages: Python, JavaScript, C, C++, HTML/CSS, MATLAB
Frameworks & Libraries: FastAPI, React, Next.js, Tailwind CSS
Tools & Platforms: Git, GitHub, Docker, Linux/Bash, Jupyter Notebook, REST APIs, Render

PROJECTS

ImageLab | *Python, JavaScript, FastAPI, React, Next.js, Tailwind CSS, Docker, Render, Pillow, Hugging Face API*
- Reimagined a CS150 terminal-based BMP editor into a full-stack, cloud-deployed image processing platform with a polished web interface and expanded functionality
- Engineered a **FastAPI** backend with modular endpoints for image transformations, supporting all major formats (PNG, JPG, WebP, BMP) via Pillow and enabling AI-assisted edits with Hugging Face models
- Implemented both foundational filters (e.g., brightness shift, blur, mirror, monochrome) and advanced effects (e.g., sepia, pixelation, rotation, color channel shifts, negative inversion) for versatile image editing
- Developed a **Next.js** + **React** + **TypeScript** frontend with **TailwindCSS** to deliver an interactive, responsive, and user-friendly editing experience
- Optimized workflows with **Docker**-based containerization, and deployed the backend to **Render** and frontend to Vercel for reliable demo access

Letter Cascade | *JavaScript, HTML, CSS*
- Designed and developed a fast-paced, browser-based word game where players catch falling letters to form valid English words under time pressure, using **JavasScript**, **HTML**, and **CSS**
- Implemented smooth falling letter animations and responsive input handling to support both mouse clicks and real-time keyboard interactions
- Engineered core game mechanics including a 60-second timer, dynamic scoring system, and interactive word buffer with submit/delete functionality

EXPERIENCE

Camp Instructor | Ridgefield Academy   Jun. 2025 - Jul. 2025
- Led groups of **15+** campers through daily activities, adapting to varying interests and age levels
- Collaborated with counselors and leads to create engaging themed activities, events, and games each week
- Supervised off-campus trips and transitions, ensuring safety, coordination, and a positive experience

Head Counselor | Camp Argo   Jun. 2024 - Aug. 2024
- Supervised and led **20+** school-aged children of all abilities through games, songs, and group activities
- Fostered a safe, inclusive environment while actively managing group dynamics and camper well-being
- Adapted activities to individual needs and resolved conflicts, ensuring smooth transitions of **10+** activities

VA Ambassador | U.S. Department of Veteran Affairs   Sep. 2022 - Sep. 2023
- Coordinated transportation for **50+** elderly and low-mobility patients weekly, ensuring timely medical care
- Supported hospital operations by guiding patients, answering inquiries, and assisting with on-site logistics
- Collaborated with medical staff to improve patient flow and enhance coordination across departments