Brady Wozniak

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EDUCATION

Bachelor of Science, Computer Science **Expected Graduation: April 2027**
Michigan State University – East Lansing, MI
• Courses: Introduction to Programming I & II, Discrete Mathematics

EXPERIENCE

Research Assistant Feb 2024 - Current
Michigan State University, East Lansing, MI
• Developed and implemented PyTorch-based autoencoder models with NumPy within a Linux subsystem, tailored for Carbon alpha atoms in a research lab, effectively reducing input size while accurately reconstructing molecular structures with a 99% accuracy.
• Refactored an existing PyTorch codebase into PyTorch Lightning, improving code organization, readability, and scalability.
• Presented findings to faculty and peers, showcasing technical knowledge and communication skills in the field of computational chemistry.
• Reviewed and corrected bugs in Python, retrained Artificial Intelligence models, and refined data preprocessing and input methods, resulting in a more efficient and capable model with a 10% improvement in prediction accuracy.

PROJECTS

Educational Website June 2024 – Current
• Developed a full-stack educational website to teach scribing techniques to international students in the United States, leveraging React.js for the front-end, CSS for styling, HTML for structure, and SQL for database management.
• Engineered a back-end infrastructure using Python with Flask, managing server-side logic, handling data requests, and integrating with an SQL database to securely store user accounts and authentication details.
• Integrated social media APIs to connect the website with various platforms, enhancing user engagement through easy access to the website's social channels.
• Utilized Git for version control, managing code changes, collaborating with team members, and maintaining a detailed project history throughout the development lifecycle.
• Created and styled key website components, including a responsive homepage, about page, sign-up page, and customer support page, ensuring a seamless and intuitive user experience across different devices and screen sizes.

Mario Speed Run Assistant Sept 2023 – Oct 2023
• Developed a specialized tool in Python designed to assist "Super Mario 64" speed runners by determining optimal paths and glitch exploits based on character position and enemy locations.
• Applied a thorough analysis of in-game mechanics, factoring in position data, enemy placements, and environmental variables to compute optimal path recommendations
• Integrated algorithms into a user-friendly Python interface that estimates the fastest routes and uncovers potential glitch opportunities based on current in-game variables, providing real-time advice for advanced speedrun strategies.
• Resolved software issues by imposing specific limitations on the interface to ensure that only realistic scenarios could be entered, thereby improving the accuracy of predictions and overall tool performance.

Designer Wardrobe Jan 2024 – Feb 2024
• Developed a tool in Python using Tkinter for a user-friendly graphical interface, enabling users to upload images of their wardrobe, automatically categorizing items and generating personalized outfit combinations.
• Implemented a feedback loop within the GUI, where users could favorite or discard suggestions, integrating OpenAI's DALL-E to generate new, creative outfit ideas aligned with user-selected preferences.
• Optimized the iterative process to improve engagement, allowing users to refine suggestions continually until finding satisfying and tailored outfit designs.

SKILLS

Programming: Python, Java, HTML, C++, SQL, JavaScript, Typescript
Libraries: PyTorch, ReactJS, NumPy, Pandas, Tkinter
Other: Office365, Linux, Data Structures and Algorithms, Git, JSON, CSS