Cory DeWitt

773-749-3827 | cjdewitt@usc.edu | Github | LinkedIn

EDUCATION

University of Southern California Los Angeles, CA
Graduating May 2025 *August 2021 – Present*
Degree: Bachelor's in Computer Science

- GPA: 3.75
- QuestBridge National Match Recipient ~ full-ride to attend USC out of 25,000 applicants
- Dean's List Fall and Spring 2022
- Shift SC's Ethics of Artificial Intelligence Initiative Lead

Relevant Coursework: Data Structures, Algorithms, C++, Python, Linear Algebra, Calculus, Discrete Mathematics, Software Engineering, Embedded Systems, Swift

PROJECTS

- **Research-GPT:** Created an academic research assistant powered by OpenAI's GPT-3.5 language model, streamlining literature reviews and knowledge discovery in the academic domain. Integrated **Python** and **Flask** to seamlessly connect with ArXiv API for academic paper retrieval and metadata. Leveraged Python libraries for efficient literature searches based on subject matter and PDF text analysis.
- **Duel Doodle Jump:** Developed a multiplayer web application of the popular video game Doodle Jump as a part of a team. Focused on the game functionality and game physics using **Java** and **LIBGDX**.
- **NBA Data Analysis:** Engineered a web application using **Python**, **SQL**, **Flask**, **HTML**, and **CSS**, enabling users to explore NBA player statistics since 1993. Utilized machine learning to forecast hypothetical season stats with matplotlib and pandas. In the process of acquiring a domain for the project's web presence.
- **HackTech23 - Uniswap**: Developed a full-stack web app employing **Python**, **JavaScript**, **HTML**, **CSS**, **MongoDB**, and **Flask**. Designed a localized marketplace for college students to buy and sell used goods, with a focus on sustainability. Aiming to reduce waste and environmental impact associated with shipping and packaging.

WORK EXPERIENCE

Undergraduate Researcher California
USC Information Science Institute STEEL Lab *December 2022 - Present*

- Employed PGFuzz to control autonomous drone state transitions in software emulators.
- Analyzed Ardupilot source code to identify vulnerable traces and state transitions, enhancing cyberattack resilience.
- Monitored drone paths using Angr's binary analysis framework, enabling concolic testing.

REU Intern California
NSF and Information Sciences Institute March 2023 - August 2023

- Published a research paper in the International Workshop on Security and Privacy of Sensing Systems (Sensors S&P '23) in Istanbul, Turkey
- Developed SensorLoader to extract communication data from microcontrollers, bolstering cyber-physical attack defenses.
- Leveraged Ghidra, an NSA-developed decompilation tool, for reverse engineering microcontroller firmware.
- Utilized OpenAI's "text-davinic-002" large language model for unstructured PDF analysis and integration with Ghidra via QARetrieval.

SKILLS

Programming Languages: Python, C++, Java, Matlab, Swift
Full Stack Development: HTML, CSS, JavaScript
Other: PyTorch, numPy, Pandas, TensorFlow, Flask, LangChain, LIBGDX, MongoDB, SQL, SpringBoot, Angr, and Ghirda