DONOVAN CLAY

Software Engineer

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github.com/donovanclay

WORK EXPERIENCE

Amazon (AI Platform Team, Seattle) Software Development Intern Jun. 2024 - Sep. 2024

University of Washington, Paul G. Allen School of CSE Part-time Teaching Assistant Jan. 2024 - Mar. 2024

Assisted in teaching a Digital Circuit Design class of 43 students.

- Hosted support hours 5 hours a week to help students understand concepts from class and debug their projects
- Coordinated with a teaching staff of 5 other people to grade weekly assignments

RESEARCH EXPERIENCE

UW ACME Lab HLS4ML Team Jan. 2024 - Current

Team is developing software to convert from neural network code, written in Python, to SystemVerilog, which implements the ML models in hardware on FPGAs.

- Developed benchmarks to test handmade SystemVerilog models against the SystemVerilog model generated by the HLS4ML tool
- Coordinated with a team from Drexel University to collaborate on a system to monitor material deposition
- Investigated errors in the HLS4ML implementation of the Keras BatchNormalization layer

PROJECTS

Indoor Air Quality Controller https://github.com/donovanclay/isy Jul. 2022 - Sep. 2023

This controller manages the supply and exhaust fans in a house to keep stable air pressure and humidity.

- Communicated with APIs to poll local weather, air quality, and the house's security system
- Used sensors to detect airflow, humidity, motion, and occupancy and control fans based on that data
- Used Python sockets to implement a Websocket to send live updates about the state of the application
- Used React and NextJS to develop and Docker to deploy a local website to show real time diagnostic data
- Used Python to implement logic to equalize exhaust airflow with supply airflow

"Foodbot" Discord Bot https://github.com/donovanclay/foodbot Jan. 2023 - May 2023

This is a general purpose Discord bot with many fun, random features. It can check when UW CS homework is released, generate images, chat with the user with different personalities, and track keyword occurrences and typos.
APIs used: ChatGPT, Bing Spell Check, Stability AI Image Generation.

- Harnesses APIs for features like typo recognition, prompt based image generation, and a chat bot with configurable personalities
- Uses REST to poll UW CSE course websites to download homework

illustrAItor Finalist in UW Hackathon 2022 https://github.com/donovanclay/illustrAItor Oct. 2022

This project makes reading more enjoyable by complementing it with customizable AI-generated illustrations. illustrAItor creates captivating illustrations to complement the passage of text being read.
APIs used: Stability AI Image Generation, Google Books.

- Produced the project in 24 hours in a highly competitive environment
- Worked in a small group of 4 for long hours
- Used multiple API's to pull and serve information to and from different services

EDUCATION

B.S. Computer Engineering with Honors University of Washington Sep. 2022 - Jun. 2025
Paul G. Allen School of Computer Science and Engineering 3.91 Major GPA

B.A. Comparative History of Ideas University of Washington Sep. 2022 - Jun. 2025
Interdisciplanary degree in social sciences, philosophy, communications, sociology, and more 3.90 Major GPA

Computer Engineering Prerequisites Bellevue College Sep. 2020 - Jun. 2022
Transfered to University of Washington 3.93 GPA

SKILLS

Python - Java - C/C++ - Rust - SystemVerilog - FPGAs - PyTorch - TensorFlow - Huggingface - Docker