Jason Chau

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Education

Richardson, TX	**University of Texas at Dallas**	**August 2020 - May 2024**
● *Bachelor's Degree in Software Engineering*		*GPA: 3.38*

Projects

PokeTracker | *SvelteKit, TypeScript, Firebase, PokeAPI, Vercel*
- Developed a web application for Pokémon enthusiasts to track their shiny hunt progress and manage their Pokémon collection.
- Integrated **Firebase Authentication** to provide secure user sign-up, login, and email/password management functionalities.
- Fetched information from PokeAPI in order to get
- Implemented Svelte reactive stores to efficiently manage and persist collection data, reducing unnecessary database reads and writes.
- Extracted data from **PokeAPI**, including Pokémon names, IDs, and sprites, to dynamically populate and update user collections, enhancing the application's interactivity and data accuracy.
- Designed and implemented a responsive and modal-based interface for viewing and modifying Pokémon data, enabling users to seamlessly update information such as shiny hunting progress, EV stats, and collection details.

Pokemon Shiny Hunting Bot | *Python, C++, Arduino*

- Developed an automated system for shiny Pokémon hunting on official Nintendo DS hardware, using an Arduino Nano, webcam, and photoresistor.
- Developed two detection methods for identifying shiny Pokémon:
    - Image Comparison: Captured Pokémon screenshots and analyzed them using **OpenCV** and **NumPy** to compare with reference images and detect shiny variations.
    - Light Detection: Leveraged a photoresistor to measure extended light delay patterns unique to shiny Pokémon appearances.
- Automated in-game navigation by programming servo motors to control button presses, allowing for continuous encounters and seamless menu interactions.

Automated Quiz Taker | *Python, Bash*

- Developed a Python script to automate trivia quiz completion by analyzing and selecting correct answers.
- Utilized web scraping and **Selenium** to dynamically interact with quiz interfaces.
- Leveraged **OpenAI's Whisper**, an automatic speech recognition system, to interpret audio challenges, enabling automated navigation and the bypass of reCAPTCHA verifications.
- Implemented error handling and logging to improve script reliability and debugging.
- Automated script execution using a custom Bash script scheduled to run daily with crontab, all performed on a Raspberry Pi.

Aggregate Shopping Cart | *HTML, CSS, JS, PostgreSQL, React*
- Collaborated with a team to create a personal-project manager and shopping cart for users and expert users to collaborate and create real-life projects/renovations
- Created login page and registration pages using **Chakra UI** components using forms, modals, and hooks for form control
- Documented entire SDLC process, including project management plan, requirements, architecture, design plan, and testing plan

Musi to YouTube Playlist Converter | *Python*
- Developed a python script to generate a YouTube playlist on any account from a different playlist on the mobile app Musi
- Web scraped the YouTube URLs in the playlist generated from Musi's share link using the **Selenium** and **BeautifulSoup** libraries
- Utilized the YouTube API in order to create a new and empty playlist, and to insert all the YouTube URLs into the newly generated playlist

Comet Dash | *Unity, C#*
- Designed and developed an infinite-runner-style driving game with **Unity** and **C#**.
- Implemented infinite-level generation, including dynamic road and terrain creation
- Created a custom jump function with realistic gravitational physics to enhance the car's movement and gameplay mechanics.
- Optimized procedural generation for efficient performance and smooth transitions between generated segments.

Other Course-related work

Cybersecurity Attack and Defense Lab
- CTF-competition styled course, involving exploiting programs with specific flaws within the binary using various techniques.
- Used **Python** and **C** to send input to a program to exploit **x86** assembly and find the hidden password needed to complete the challenge

Computer Animation
- Created programs written with **C++** using **nanogui** and **OpenGL** libraries to create interactable programs that taught rotation, transformations, bone-structures, and other aspects of animation
- Created a 4-sequence looping animation of a 3-D avatar in **Unity**