John Sy
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Employment

Boeing
Software Engineer, L1 June 2022 -Present

Developer at Boeing Defense, Space, and Security (BDS).

Naval Nuclear Laboratory - Fluor Marine Propulsion
Associate Software Engineer (Integrated Software Technologies) June 2021 -July 2022

Design, develop, and maintain software products used by physicists, engineers, and other users in support of the U.S. Navy and the U.S. Department of Energy. Participated in a development team dedicated to Scrum/Agile methodology to manage work for customers and software spanning locations throughout the world.

Involved in maintaining/developing large codebases of varying lifespans and technologies ranging from C++, Java, Python, to JavaScript. Developed and documented new features based on user requests alongside unit/system tests, as well as bug fixes for production releases. Also involved in planning and prototyping of exploratory web applications.

Personal Projects

3D Music Visualization with SoundCloud API
A primarily **JavaScript** web application served on **Flask** that randomly generates a 3D world with trees, fireflies, clouds, and a waterfall. A custom music player built for the **SoundCloud API** lets you choose your favorite track and watch as the fireflies move and change shape/color in response to your music. *Note that SoundCloud has now disabled public access of their API as of 2021, the Application still works with the default/sample track.*

- Uses **asynchronous** requests to the **SoundCloud API** to load buffered audio data from the resulting response into a custom music player featuring a **neumorphic design**.
- Utilizes **Howler.js** library and the **WebAudio API** to create an **audio context graph** and an audio analysis node to generate an array of integers that correspond to frequency data from your song playing in real time.
- Said frequency data is then fed into a **Three.js** scene which uses 3D terrain meshes created from geometric primitives that are placed randomly throughout the allowed 3D space.
- The frequency data informs a set of randomly shaped and placed fireflies whose **RGB** values, **vertical/y-axis displacement**, and **horizontal (x/z-axis) movement** are associated with said frequency data.

Weather Web App
Flask web-application displays weather information for any city/location in the world with a google-maps style weather map and hourly temperature graph.

- **API** calls to Weatherbit.io and Openweathermap.org.
- **JSON** weather data returned is stored in an **array** of **hashmaps**, where each hashmap element in the array represents weather data for a single day of the week, such as temperature, humidity, etc. for that day.
- **HTML** results page converted to Jinja template using **Bootstrap4** for styling, to which data was passed via **Flask**.
- **jQuery** used for **DOM** manipulation to dynamically calculate and update **HTML** elements on entire page between imperial and metric unit values, using a single toggle switch.
- **Chart.js JavaScript** library used to create hourly weather graph.
- **Leaflet JavaScript** applet embedded in the page whose layers were provided by Openweathermap API and weather data was populated via hashmap array data in Flask.

Website

https://john-sy.com

Github

https://github.com/DarkHorse108

Languages

Primary Experience:
Python, JavaScript

Other:
C++, Java

Technologies

- ❏ React
- ❏ Flask
- ❏ Node.js
- ❏ Three.js
- ❏ MySQL/MariaDB
- ❏ Microsoft Azure Github Enterprise

Education

B.S. Computer Science
Oregon State University
(2018 - 2020)

B.S. Biology
Hawaii Pacific University
(2010 - 2013)
Colorado State University
(2008 - 2010)