John Sy
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Employment

Boeing
Software Engineer June 2022 -Present

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

Primarily focusing on real-time and embedded computing. Collaborate with mechanical, electrical, and aerospace engineers in developing various software products to meet U.S. government and international customer needs.

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.

Website

https://john-sy.com

Github

https://github.com/DarkHorse108

Languages

Primary Experience:
Python, C#, C/C++

Other:
Javascript, 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)