Sheng Tse Tsai

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Experience

Junior Software Engineer Aug 2022 – Aug 2023

Bright Pattern, Inc. *San Francisco Bay Area, CA*

- Designed and implemented feature to support VDI into product for all major operating systems and browsers
- Ported a key component to compile natively on M1 macs, creating universal binaries, allowing single release for M1/Intel Macs
- Consolidated service's build system, streamlining the compilation process for C++ code and libraries, improving build lifecycle

Undergraduate Computational Researcher June 2021 – June 2022

Center for Qualitative Life Sciences, Oregon State University *Corvallis, OR*

- Benchmarked multiple image segmentation methods on precision and recall, reduced amount of false positives detected and saved storage space needed by a large margin (Paper on Frontiers Science)
- Deployed a CNN image classification pipeline on HPC clusters that processes over 100TB of raw video data (per transect) captured by underwater imaging system (ISIIS)
- Assisted in deployment of segmentation tool with massive speed improvements on processing time
- Migrated and streamlined data pipeline across different HPC clusters

Education

Oregon State University Corvallis, OR

B.S. in Computer Science, Minor in Mathematics *Sept 2018 – March 2022*

Projects

Wave Energy Visualizer | *TypeScript, Angular, Firebase*

- Developed a web-based tool that visualizes Wave Energy Converter (WEC) data in 3D
- Integrated backend using Cloud Firestore, with an extensible database schema for metadata upload and storage
- Implemented cloud solutions such as Cloud Storage, Authentication and Functions

Hydrodynamics data parser | *Rust, PyO3, Python, NumPy*

- Implemented a native Python module using Rust Bindings
- Parsed frequency-based hydrodynamics data into time-series using FFT

Publication

- Panaïotis T, Caray–Counil L, Woodward B, Schmid MS, Daprano D, Tsai ST, Sullivan CM, Cowen RK and Irisson J-O (2022) Content-Aware Segmentation of Objects Spanning a Large Size Range: Application to Plankton Images. Front. Mar. Sci. 9:870005. doi: 10.3389/fmars.2022.870005

Technical Skills

Programming Languages: C++, C, Python, JavaScript, Typescript, SQL
Tools: Jenkins, Linux, bash, gdb, OpenMP, OpenCV, React, Node.js, MongoDB, slurm, numpy, Git
Natural Languages: English and Mandarin (bilingual proficiency)