ShengTse Tsai

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Employment

Junior Software Developer Aug 2022 – Aug 2023

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

- Designed and implemented VDI support for contact center software, with cross-platform compatibility.
- Optimized desktop app for Apple Silicon by compiling dependencies natively and generating universal binaries.
- Rewrote core service's C++ build system, implementing dependency checks and error logging.
- Benchmarked video codecs using product, to look for lower bitrate screen recording to minimize server cost.

Undergraduate Computational Researcher June 2021 – June 2022

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

- Developed high-performance image segmentation tool using MSER algorithm and leverage HPC architecture.
- Conduct vigorous tests on multiple image segmentation methods, optimizing for precision and recall. Paper
- Deployed CNN image classification pipeline on HPC clusters that processes terabytes of underwater video data.
- Led the migration of our data pipeline across different HPC clusters (Pittsburgh Supercomputing Center).

Education

Oregon State University Corvallis, OR

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

Projects

Wave Energy Visualizer

- Developed 3D web visualization tool for Wave Energy Converter data.
- Integrated Google Cloud Firestore backend with extensible database schema.

Hydrodynamics Data Parser

- Implemented native Python module in Rust for faster performance.
- Parsed 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

Technicals

Programming Languages: C++, Rust, Python
Tools: Linux, bash, gdb, OpenMP, Jenkins, docker, slurm, OpenCV, numpy, Git
Natural Languages: English and Mandarin (bilingual proficiency)