ZHAOWEI LIN

(475) 287-9283 * zhaowei.lin@yale.edu * linkedin.com/in/zhaowei-lin

EDUCATION

Yale University, New Haven, CT — Expected Graduation May 2022
MS in Computer Science
Relevant Coursework: Operating Systems, Database

Zhejiang University, Hangzhou, China — Sep 2017- Jun 2021
BS in Digital Media Technology, GPA: 3.93/4, Rank: 1/55
Relevant Coursework: Data Structures, Computer Networks, Computer Graphics
Awards: Zhejiang University Scholarship – 2nd Prize for Top Performance & Volunteer Work

WORK EXPERIENCE

Bytedance, *Software Intern (C++)*, Hangzhou, China — Aug 2020 – Mar 2021

- Work on the Effect SDK team that provides visual and audio effects for Tiktok, CapCut, Lark Meetings, etc.
- Organize discussions with global teams to align the requirements of a music sticker; Develop the interface based on the backend audio SDK and expose it via Lua; deliver a live demo to the client presenting the tuning of different parameters with detailed documentation;
- Work with designers to bring the Music Helmet sticker online. It is used by about 10, 000 users in the second week.
- Identify rare crash cases (1% chance of crashing) for an existing sticker and fixed them.

NESA Lab at Zhejiang University, *Research Intern*, Hangzhou, China — Sep 2019 – Mar 2020

- Surveyed IoT services of various platforms (Azure, GCP); Wrote formal verification models for them.
- Wrote adapters to send packets across different protocols; fixed a bug caused by misinterpretation of protocol during fuzzing in open-sourced MQTT.js library and created a pull request to contribute back.
- *MPInspector* accepted by USENIX' 21.

PROJECTS

Computing & Optimizations

- Implemented the algorithms and reproduced the results presented in *Schrödinger's Smoke (SIGGRAPH 2016)* with Compute Shaders in Unity on GPU. It runs about 80% faster than the original CPU implementation. The paper applies Quantum Mechanics to fluid simulations. [C#/Unity] [Github]
- Reproduced the paper Fuzzy Warp. It finds a deforming animation between 2 polygons by minimizing the weighted cost of translation and rotation for each vertex. [JS/WebGL] [Github]
- Implemented Interactive Digital Photomontage. It segments a series of images by optimizing the loss of cuts. Parts of the images are stitched seamlessly by solving a linear system. [C++] [Github]

Systems

- Made a MiniSQL engine that supports inserting, deleting, and searching. It is indexed by the B+ Tree and supports multi-table queries. Data are stored column-wise in a single-paged file. [C++] [Github]
- Led a team to make a C compiler and worked on YACC, AST & type management. It produces AST in the 1st pass. It does semantic analysis & generates target codes using LLVM in the 2nd pass. [C] [Github]
- Implemented a script engine tailored for a text-based game, which translates JavaScript-like language; it supports branching, functions calls, variable manipulating, and formatting. [C++] [Github]

Graphics & Visualization

- Led a team to develop a motion-sensing game with Joy-Cons (Bluetooth). [C#/Unity] [Github]
- Implemented an image processing library that supports HDR, histogram equalization, Otsu thresholding, color space transformation, bilateral filter, etc. [C/C++] [Github]

SKILLS

Programming Languages & Frameworks: C/C++, Javascript/Typescript, C#, Python, React.js