Sitao (Charlie) Tong

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EDUCATION

The Ohio State University, Columbus, Ohio   **Aug 2021- Dec 2023(Expected)**
B.S in Computer Science and Engineering (Transfer);   GPA 3.88/4.0
Zhejiang University of Technology, Hangzhou, China   **Sep 2018 - Sep 2021**
B.S in Software Engineering;   GPA 86/100

SKILLS

Courses: Operating System, Computer Networks, AI, Algorithms and Data Structure …Transcript Link

- Programming Languages: Java, Python, C++/C, Ruby, SQL, MatLab, HTML, JavaScript
- Frameworks/Platform: React, SpringMVC, Pytorch, Numpy, Rails, Git, Maven, Linux, AWS

PROJECTS

Location Based Campus Activity System [Github] | Java + Spring   Jan 2021 - Feb 2021
(Group of 4) Leader | Database Design, Backend;

- Created a web application for campus activity management, enabling location based search, check-in/out, comment, information upload, and online approval.
- Implemented the web based on **SSM** (Spring+SpringMVC+Mybatis); Deployed the **MySql** database on **AWS**; stored image data in **AliyunOSS**. Group cooperate and control version with **GitHub**.

A Course Rating Web System [Github] | Ruby on Rail   Jan 2023 – Feb 2023

- Engineered an efficient **SQLite** database schema and integrated **RESTful** APIs for streamlined **CRUD** operations based on functional requirements.Implemented **Devise** authentication for robust user login capabilities, enhancing security and access control.
- Revamped CSS and incorporated Buckeye UX principles to create an visually appealing front-end.

ML-based Review Sentiment Prediction [Github] | Python   Aug 2022 - Dec 2022

- Developed a machine learning prediction system using **Numpy** and **Sklearn**.
- Transformed data into a Bag of Words(**BOW**) representation; applied tf-idf ranking to clean features. Improve the training time by 10%.
- Evaluated the system's performance and plotted its running time and accuracy using **Matplotlib**.

A gRPC-based concurrent ray-tracing rendering farm | C++   Nov 2022 - Dec 2022
Object / API design

- Applied Ray casting and Schlick Approximation to solve Ray-object intersection and glass reflectivity.
- Utilized **gRPC** to allow concurrent rendering based on a client-server communication framework.
- Implemented multi-threading and improve the performance of each worker by 189% percent.
- Utilized OOP in organized and structured manner; designed JSON client-server protocol.

Space Invader Game [Github] | C   Jan 2022 - Mar 2022

- Developed the Space Invader with simulation timer and physical bouncing and hitting effects.
- Utilized a linked list with garbage collection and reference counting to efficiently store enemy information, mitigating a 25% risk of memory leakage in cases of unsuccessful memory allocation.

Core Language | C   Jan 2023 - Mar 2023

- Implemented scanner, parser and excecutor with memory management of *core language*.

Earthquake SOS Car [Github] | python   July 2020-Aug 2020

- Developed an SOS car system which can make its way out of a dangerous place, cry for help, recognize rescue team and lead the them back to the spot.

- Deployed on Raspberry Pi 3 under **Linux (Ubantu)** developed the motor control, routing and recognize rescue team detection with with cascade classifier with **OpenCV**.

DocFetcher, A Local Full-text Search Engine [Github] | Java   Sep 2019-Jan 2020
- Developed a windows local full-text search engine with **Java** based on **Lucene** library.
- Implemented GUI with multiple filter options and a content preview window that highlights keywords.

EXPERIENCE

Virtual Hybrid Inc.
Pawstopia, a pet social network platform   Chino Hills, California
Full Stack Developer Intern   Jun 2023 – Aug 2023(Expected)
- Designed and implemented a **Restful** API for seamless communication between front and the server.
- Utilized **Redux** along with **React hooks** to enhance performance in the front-end development to streamline API communication, resulting in 3x improvement in page loading time. Kept a clean style by actively applying Reducer and **Lodash**, reduced 25% in code complexity.

The Ohio State University, CSE department   Columbus, Ohio
Software 2 Teaching Assistant (AU22)   Aug 2022 - Dec 2022
- Instructed the student on lab, debugg and explain errors and corrections to them.
- Graded homeworks and reflected the common mistake to professor, resolve the grading issue.

Zhejiang University of Technology, Computer Vision Lab
Fine-Grinded Sketch Based Image Retrival System with ViT [Github]   Hangzhou, China
Research Assistant (Instructor: Cong Bai)   Nov 2020 - Jun 2021
- Improved the algorithm by applying **Vision Transformer**(ViT) layer to the branches of **Siamese Neural Network**. Implemented and trained the enhanced model using PyTorch on GPU of cloud server. The top1 accurracy improved by 4% compared to the conventional approach.
- Built an AI web application based on the algorithm which user could sketch shoes on the drawing board build with **JS** and fetch matched the product image in the library on server built with **Flask**.

First Tech Challenge 2016: Res-Q, World Championship   St. Louis, Missouri
(Group of 6)Team 11057:LoG | CAD, Program   Nov 2015 - Apr 2016
- A robotic competition aimed at driving with the guidance of an indicator, identifying the color of light, to push the corresponding button, while also controlling a telescopic arm to release collected balls.
- Implemented autonomous code using Android Studio to control the server and used **openCV** to detect the color and indicator.
- Created 3D printed parts and assemblies using **AutoCAD/Creo/SolidWorks** for motion analysis.
- Led the championship team among over 60 teams in the China Final and won the PTC design award.

HONOR & PRIZE
- *CSE 2231 Teaching Assistant*
- *2018-2019 ZJUT Learning Scholarship*
- *2016 First Tech Chanllenge, Leader of Champion team in China*
- *Dean's List (4/4 Semesters)*
- *2018 ZJUT Debate Team Top8*