Tiffany (Ting-Hsuan) Lin

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Education

Duke University *Durham, NC*

MASTER OF SCIENCE, ELECTRICAL & COMPUTER ENGINEERING (GPA: 3.91/4.0) *Aug. 2022 – Expected May. 2024*

- Coursework: Software Engineering, Robust Server Software, Systems Programming, Security
- Teaching Assistant: Data Structure and Algorithm in C++

National Taiwan University (NTU) *Taipei, Taiwan*

BACHELOR OF ENGINEERING, CIVIL ENGINEERING (GPA: 4.07/4.3) *Sep. 2018 – Jun. 2022*

- Dean's List (Fall 2018, Spring 2018, Fall 2020)
- Coursework: Machine Learning and Deep Learning, Photogrammetry and Computer Vision, AR/VR Techniques

Skills

Programming Language: **Python**, **C/C++, Java**, SQL, JavaScript, TypeScript, C#, HTML, CSS, Swift
Framework & Tool: **Git, ReactJS, Django**, **JUnit, Docker, PostgreSQL,** Unity, pthread, CI/CD, PyTorch, SwiftUI

Experience

TSMC Taiwan Semiconductor Manufacturing Company | Application System Engineer Intern *Hsinchu, Taiwan*

TypeScript, React, Node.js, Express.js, HTML, CSS *Jun. 2023 – Aug. 2023*

- Implemented a chatbot with deep inquiry comprehension and precise filtering for a B2B customer service platform.
- Improved company efficiency by implementing automated, immediate responses, and extending operational hours.

National Taiwan University - Computer-Aided Engineering Lab | Undergraduate Researcher *Taipei, Taiwan*

Python, C#, Unity, PyTorch, Mask-RCNN, OpenSFM *Jul. 2021 – Jul. 2022*

- Automated construction progress tracking by generating 3D point cloud segmentation of a construction site.
- Designed features in HoloLens to align a construction site's Building Information Modeling (BIM) with the real world which displayed the predicted construction progress, shortest path to the construction target.

National Center for Research on Earthquake Engineering | Summer Intern *Taipei, Taiwan*

Python, Pandas, C, QGIS *Jul. 2020 – Aug. 2020*

- Analyzed the safety and availability of roads and bridges with Python by extracting information from QGIS software.
- Processed location addresses in an irregular format using regular expression.

Projects

Strategy Conquest Online Game | Java, Gradle, CI/CD, Docker, JavaFX, JUnit, Mockito, FxRobot

- Coordinated a team of four to design a game that incorporated a fog of war feature, allowing players to execute various actions such as attacking, moving, and upgrading soldiers, while also gaining resources from their territories.
- Developed user registration and server-client connection for a user to be a player of multiple games simultaneously.
- Conducted unit testing and integration testing and achieved 86% line coverage.

Mini UPS System | C++, Python, Django, PostgreSQL, HTML, CSS, pthread, Docker

- Worked in a team of two to develop a full-stack shipping system paired with a truck warehouse system and accepted shipping orders from "Mini Amazon" developed by other groups via custom-defined Google Protocol built upon TCP.
- Assigned trucks to pick up multiple packages according to the package address in an effective way.
- Featured an intuitive interface for user registration functionality, destination update and shipment status display.

HTTP Proxy Server | C++, Docker

- Built a server that can handle GET, POST, and CONNECT requests concurrently.
- Cached HTTP response according to the validation and expiration rules defined in RFC7234 to improve efficiency.
- Handled error responses gracefully and kept the information in a log file.

Thread-Safe Memory Allocator | C, pthread

- Implemented Malloc Library, experimented with First Fit and Best Fit allocation strategies and evaluated tradeoffs.
- Made it thread-safe, with a locked version (pthread mutex) and a lock-free version (Thread Local Storage).

Mini Uber Website | Python, HTML, CSS, Django, PostgreSQL, Docker

- Designed and implemented a mini-Uber platform with user registration functionality, featuring an intuitive interface for editing ride information by owners, sharers, and drivers.
- Enabled users to request and join rides, and drivers to book and manage rides efficiently.

Wasted Material Recycling Competition | Python, Mask R-CNN, ResNet50-Unet, DeepLabv3, Segments.ai

- Worked with a team of 5 to design a system for recycling wasted materials in construction with Image Segmentation.
- 2nd place, VIMS-IAARC Joint Datathon Competition 2022, with an average (IoU) value of 0.62.