Wei-Hsin Yen

Taipei, Taiwan | zack09955189@gmail.com | 0908 022 887 | myWebsite | Wei-Hsin Yen
zackyen0603

Education

MS **National Central University**, Computer Engineering — Sept 2022 – July 2024
- GPA: 4.15/4.3 in below courseworks
- **Coursework:** Computer Architecture, Linux Operating System, The Attack and Defense of Computers, Computational Geometry, Programming Language Design, Object-Oriented Analysis and Design

ES **Meiji University**, Japanese Literature — Sept 2018 – Feb 2019

BS **National Taiwan Normal University**, Computer Science and Geography (Double Major) — Sept 2016 – June 2022

Technical Skills

Languages: C, C++, Java, Python

Systems & Development: Linux, Shell Script, Git, Docker

Web Development: React, Next.js, HTML, PHP, JavaScript, TypeScript

Projects

UML Editor — Github Link
- Developed a UML diagram editor using Java, following Object-Oriented Analysis and Design (OOAD) principles.
- Implemented functionalities for creating and modifying class diagrams, adding associations, and interactive editing.
- Designed an event-driven UI with intuitive drag-and-drop, scaling, and connection features.
- Applied modular design to separate concerns such as graphics rendering, event handling, and data storage, enhancing maintainability and scalability.
- Tools Used: Java,Swing

JudgeCoder — Github Link
- Developed an automated code generation and validation system using Large Language Models (LLM).
- Integrated Chain-of-Thought reasoning to refine LLM-generated code based on test results, improving GPT-3.5-turbo's performance on the HumanEval benchmark.
- Implemented automated code testing: LLM-generated code is tested against auto-generated unit tests, collecting and analyzing errors.
- Designed a modular architecture, dividing functionalities into code generation, test data creation, test execution, and result evaluation.
- Tools Used: Python, C++, Shell Script, ChatGPT API

Linux Operating System Project — Notion Writeup Link
- Explored Linux system internals by tracing source code and implementing custom system calls.
- Designed a system call to validate memory segment sharing and isolation across different processes, calculating start addresses, end addresses, and sizes.

- Extended the system call sys_vir2phy to traverse the Page Table and convert virtual addresses to corresponding physical addresses.
- Added a system call to count process context switches within a given time interval.
- Tools Used: C, Linux, Bash

Personal Website Link

- Developed a personal website using Next.js to showcase projects and personal background.
- Integrated GitHub for data storage and deployed via Vercel, utilizing Edge Functions for real-time updates.
- Tools Used: Next.js, TypeScript, CSS, git

Work Experience

Department of Computer Science, National Central University, Teaching Assistant, Compiler Design — Sep 2022 - Feb 2023

- Guided students in using LEX and Yacc for lexical analysis, syntax analysis, IR conversion, and optimization.
- Assisted in grading and testing compiler projects.

Department of Computer Science, National Central University, Teaching Assistant, Python Programming — Feb 2023 - Jul 2023

- Assisted students in learning fundamental Python concepts, including development environment setup, version control (Git), and debugging techniques.
- Developed and maintained an online Python programming grading system (Online Judge).
- Graded assignments, provided student feedback, and evaluated team projects.

Publications

Enhancing Code Generation Accuracy through the Addition of LLM Judging Units in a Multi-Agent System — July 2024

Wei-Hsin Yen, YungYu Zhuang

NDLTD in Taiwan

A Static Analysis Approach for Detecting Array Shape Errors in Python. — To appear

YungYu Zhuang, Chien-Wen Kao,***Wei-Hsin Yen***

Journal of Information Science and Engineering (JISE), Special Issue on Cross-domain Software Development and Application Technologies.