Lemuel LEE Kwok Lam

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EXPERIENCE

Question Writer & Programmer Jul 2022 — Aug 2022 & Mar 2021 — Aug 2021

Shatin Pui Ying College

- ❏ Authored multiple-choice question templates following the HKDSE Mathematics and Physics syllabuses
- ❏ Programmed in a custom external domain-specific language based on JavaScript and KaTeX
- ❏ Used such meta-language to generate HTML code, mathematical tables, graphs, and 3D graphics
- ❏ Typeset mathematical equations
- ❏ Participated in the development of the language
- ❏ Mentioned in a weekly article of Sing Tao Daily: https://std.stheadline.com/smartparents/article/2572

Fullstack Developer Jun 2022 — Aug 2022

Shatin Pui Ying College

- ❏ Developed an electronic ticketing system for the school Musical.
  - Semi-automated order management, seat arrangement, mission control, and bulk e-mailing
  - Admission via QR code
  - Supports CSV import and export
  - Real-time multi-user editing with different permission levels
- ❏ Developed a series of timetable scheduling web apps for exams, lessons, and HKDSE invigilation
  - Supports multiple constraints such as teacher availability, room capacity, and lesson duration
  - Generalised some core functionalities into a library for future use

Student Teaching Assistant — ENGG1340 Computer Programming II Jan 2022 — Jun 2022

The University of Hong Kong

- ❏ Tutored a class of 85 in topics:
  - Advanced Python programming
  - Linux shell commands
  - Shell scripts
  - C/C++ programming
  - Separate compilation techniques
- ❏ Hosted weekly lab sessions
- ❏ Reviewed assignments according to a marking scheme
- ❏ Guided discussions on Moodle

Student Teaching Assistant — ENGG1330 Computer Programming I Sep 2021 — Dec 2021

The University of Hong Kong

- ❏ Tutored a class of 45 in topics:
  - Python programming
  - Searching and sorting algorithms

- ❏ Hosted weekly lab sessions
- ❏ Reviewed assignments according to a marking scheme
- ❏ Guided discussions on Ed
- ❏ Gave individual video feedback on coursework

EDUCATION

Bachelor of Engineering in Computer Science Sep 2020 — Jan 2024

The University of Hong Kong

- ❏ Pursuing Focus — Theoretical Computer Science

International Exchange Jan 2023 — Jun 2023

Royal Holloway, University of London

- ❏ Computer Science

Secondary Education — Hong Kong Diploma of Secondary Education Sep 2013 — Jun 2020

Shatin Pui Ying College

- ❏ First in Information and Communications Technology in final year
- ❏ Third in Physics in final year

CERTIFICATIONS

IELTS Academic May 2022

Overall 7.5

Hong Kong Diploma of Secondary Education 2020

Chinese, English, Mathematics, Liberal Studies, Information and Communications Technology, Physics

TOEIC Listening & Reading Test Jun 2018

Overall 925

ABRSM Practical Piano Grade 7 2011

Distinction

ABRSM Music Theory Grade 5 2010

Pass

TECHNICAL SKILLS SUMMARY

Programming Languages

Python, C/C++, C#, JAVA, Haskell, JavaScript, TypeScript, SQL, LaTeX

Frameworks & Libraries

Node.js, Express.js, jQuery, React, Vue.js, SvelteKit, Quasar, Tailwind CSS, Flask, Qt, Unity, OpenCV, Sklearn, TensorFlow, PyTorch

Platforms & Tools

Linux, Docker, Git, MySQL, MongoDB, Supabase, Arduino, Processing

ACTIVITIES

ALGOGENE Algo Crypto Trading Challenge 2022 (Global) Jan 2023

Probabilistic Approach on Price Movement Using Famous Indicators

- ❏ Candle patterns, Order Block, RSI, and MFI as trading signals
- ❏ Variable volume base on past limit orders
- ❏ Achieved 530M PnL from 1M during Test Round for BTCUSD on the 2018-2020 market

Jane Street Electronic Trading Challenge 2022 (Hong Kong) Nov 2022

First runner-up in terms of final capital

- ❏ Programmed a bot to interactive with a virtual exchange to trade with computers and other participants
- ❏ Traded various kinds of stocks, bonds, ADRs, and ETFs
- ❏ Strategy focused on market-making and arbitrage
- ❏ High frequency and tick-based

J.P. Morgan Code For Good 2022 Challenge (Hong Kong) Nov 2022

Developed for Junior Achievement Hong Kong, a job shadowing web app for secondary school students

The 6th InnoShow — Faculty of Engineering, The University of Hong Kong May 2022

Invited to showcase HackOS, an educational offensive cyber-security simulator

Cathay Pacific Hackathon 2021 Nov 2021

Developed a React Native app to display COVID-19 travel restrictions on an interactive world map

STEM Camp 2019 — Shatin Pui Ying College Apr 2019

Appointed Head of STEM Committee; Organized a day camp for visiting students from 16 primary schools

- ❏ Coordinated school staff, teachers, student helpers, and visiting schools
- ❏ Designed a number of booths, games and experiments
- ❏ Developed an automated system with Google Sheet to keep track of the scores of all students across all booths and quizzes throughout the day
- ❏ Developed with LAMP stack, a real-time room status monitoring system with check-in and out via RFID cards

EE International Summer Camp 2017 — City University of Hong Kong Summer 2017

Runner-up in the camp's concluding Mini Robotic Car Competition

- ❏ Designed, 3D printed, and soldered a robotic car
- ❏ Programmed an Arduino board
- ❏ Learnt JAVA and programmed an Android app for remote control via Bluetooth Low Energy

PROJECTS

lemuellee.com Jan 2023

Personal Website, Portfolio, Blogging

- ❏ Includes About, Portfolio, Resume, and a personal blog
- ❏ SvelteKit, TailwindCSS, TypeScript, KaTeX, Vite, Netlify, MDsveX, PrismJS, RehypeJS
- ❏ Custom Content Management System for managing dynamic imports of markdown files
- ❏ Supports Svelte, KaTeX, and HTML & CSS inside markdown files
- ❏ Fully static and pre-rendered

- ❏ Achieved in Google Lighthouse: Performance (96), Accessibility (97), Best Practices (100), SEO (100)

CIFAR10-HOG-PCA-SVM — COMP3314 Machine Learning Coursework Dec 2022

Machine Learning, Computer Vision

- ❏ Image classifier for the CIFAR-10 dataset
- ❏ 62% accuracy (top 10% of class), with only 5 minutes of training time
- ❏ Support Vector Machine with the radial basis function kernel
- ❏ Pure statistical approach with no deep neural network or convolutional kernels
- ❏ Feature extraction via Histogram of Oriented Gradients
- ❏ Dimensionality reduction via Grayscaling, HOG, and Principal Component Analysis

Parallel Samplesort — COMP3230 Principals of Operating Systems Coursework Nov 2022

Multi-threading, Semaphore, Mutex lock

- ❏ Mutli-threaded Samplesort with arbitrary number of threads
- ❏ Sorts 10^8 integers in 5 seconds with 16 threads

3230shell — COMP3230 Principals of Operating Systems Coursework Oct 2022

Operating Systems, Linux, Process Management, C

- ❏ A Linux shell which supports command parsing, program execution, signals handling, multiple background processes, arbitrary number of piped processes and process statistics in any combinations

Enoch Bible Reading Challenge Oct 2022

Fullstack, Progressive Web App

- ❏ Bible reading challenge Progressive Web App tailored made for a church. Readers read 8 chapters weekly to finish all 1189. Includes leader-board and progress tracker
- ❏ Single Page Application, and instantly install-able as a Progressive Web App on all major operating systems
- ❏ Built with Vue.js, Tailwind CSS, Supabase, and Netlify

HackOS May 2022

Unity, C#, Game Development, Cyber-security

- ❏ Offensive cyber-security simulator game. Sandbox experience with pruned replicas of nmap, ssh, hydra, and an array of UNIX-like commands.
- ❏ Participating project of the 6th InnoShow held by the Faculty of Engineering, The University of Hong Kong
  - https://innoacademy.engg.hku.hk/hack/

RNA Fighter — ENGG1340 Computer Programming II Coursework May 2021

C++, Ncurses

- ❏ Terminal puzzle-solving game with interactive and colored text user-interface
- ❏ Player types RNA sequences to defuse viruses in time
- ❏ Has in-game shop, currency, and high-score leaderboard
- ❏ Includes text-based dialogues, scroll view, page navigation, and in-place buffer update

Duckietown — COMP3414 Experiential Learning on Artificial Intelligence and Robotics Dec 2020

Robotics, Computer Vision, Reinforcement Learning, Self Driving

- ❏ Simulated self-driving for Duckietown with Deep Deterministic Policy Gradient with Actor & Critic networks

Bubble Sheet OMR Jun 2019

Computer Vision, Python, OpenCV, Optical Mark Recognition, Qt

- ❏ GUI program written in Qt to detect multiple-choice question options given a bubble sheet pdf
- ❏ Coordinates can be exported for automatic marking purpose
- ❏ Supports fully automatic detection, and fine manual adjustments

School Library Management System — HKDSE ICT School-based Assessment May 2019

Qt, C++, SQLite

- ❏ GUI program that provides CRUD functionalities to common library administration, such as book categorization, borrow/return management, mass book record import, barcode scanning, and overdue alert
- ❏ Object-oriented and separately compiled

Contact List Manager — HKDSE ICT School-based Assessment May 2018

Windows API, C++

- ❏ Terminal contact manager with colored text user-interface
- ❏ Provides CRUD functionalities to manage contacts with multiple fields
- ❏ Uses hashing algorithms for authentication

COURSES

Engineering Cores

MATH1011 — University Mathematics I

MATH1851 — Calculus and Ordinary Differential Equations

MATH1853 — Linear Algebra, Probability and Statistics

ENGG1300 — Fundamental Mechanics

ENGG1310 — Electricity and Electronics

ENGG1320 — Engineers in the Modern World

Computer Science Cores

ENGG1330 — Computer Programming I

ENGG1340 — Computer Programming II

COMP2119 — Introduction to Data Structures and Algorithms

COMP2120 — Computer Organization

COMP2121 — Discrete Mathematics

COMP2396 — Object-oriented Programming and JAVA

COMP3230 — Principles of Operating Systems

COMP3278 — Introduction to Database Management Systems

COMP3297 — Software Engineering

Computer Science Electives

COMP3414 — Experimental Learning on Artificial Intelligence and Robotics

COMP3322 — Modern Technologies on World Wide Web

COMP3329 — Computer Game Design and Programming

COMP3314 — Machine Learning

COMP3340 — Applied Deep Learning

Common Cores

CCST9020 — Sustainable Development of the Built Environment

CCST9042 — The World of Waves

CCGL9038 — Global Englishes

CCCH9005 — The Chinese Cultural Revolution

CCHU9039 — Sexuality and Culture

CCHU9061 — Science and Religion: Questioning Truth, Knowledge and Life