

Lemuel LEE Kwok Lam

Computer Science Penultimate Year Student

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EXPERIENCE

Question Writer & Programmer

Mar 2021 — Aug 2021 & Jul 2022 — Aug 2022

Shatin Pui Ying College

- ❑ Authored multiple-choice question templates following the HKDSE Mathematics and Physics syllabuses
- ❑ Developed and programmed in a custom external domain-specific language based on JavaScript and KaTeX
- ❑ Used such language to generate HTML code, mathematical tables, graphs, and 3D graphics
- ❑ Typeset mathematical equations
- ❑ Featured on Sing Tao Daily: <https://std.stheadline.com/smartparents/article/2572>

Full Stack 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
 - 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

Student Teaching Assistant

Sep 2021 — Dec 2021 & Jan 2022 — Jun 2022

The University of Hong Kong

- ❑ ENGG1340 Computer Programming II: Advanced Python programming, Linux shell commands, Shell scripts, C/C++ programming, Separate compilation techniques
- ❑ ENGG1330 Computer Programming I: Python programming, Searching and sorting algorithms
- ❑ Hosted weekly lab sessions
- ❑ Reviewed assignments according to a marking scheme and gave individual video feedback

EDUCATION

Bachelor of Engineering in Computer Science

Sep 2020 — Jun 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 <i>Overall 7.5</i>	May 2022
Hong Kong Diploma of Secondary Education <i>Chinese, English, Mathematics, Liberal Studies, Information and Communications Technology, Physics</i>	2020
TOEIC Listening & Reading Test <i>Overall 925</i>	Jun 2018
ABRSM Practical Piano Grade 7 <i>Distinction</i>	2012
ABRSM Music Theory Grade 5 <i>Pass</i>	2010

TECHNICAL SKILLS SUMMARY

Programming Languages

Python, C/C++, C#, JAVA, Haskell, JavaScript, TypeScript, SQL, L^AT_EX

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, PostgreSQL, MongoDB, Supabase, Arduino, Processing

ACTIVITIES

ALGOGENE Algo Crypto Trading Challenge 2022 (Global) <i>Probabilistic Approach on Price Movement Using Famous Indicators</i> <ul style="list-style-type: none">❑ 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	Jan 2023
Jane Street Electronic Trading Challenge 2022 (Hong Kong) <i>First runner-up in terms of final capital</i> <ul style="list-style-type: none">❑ 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	Nov 2022
J.P. Morgan Code For Good 2022 Challenge (Hong Kong) <i>Developed for Junior Achievement Hong Kong, a job shadowing web app for secondary school students</i>	Nov 2022
The 6th InnoShow — Faculty of Engineering, The University of Hong Kong <i>Invited to showcase HackOS, an educational offensive cyber-security simulator</i>	May 2022
Cathay Pacific Hackathon 2021 <i>Developed a React Native app to display COVID-19 travel restrictions on an interactive world map</i>	Nov 2021

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 and 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, Tailwind CSS, 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

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 Grayscale, HOG, and Principal Component Analysis

Parallel Samplesort

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

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

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

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

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

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
IY2840 — Computer and Network Security
CS3480 — Software Language Engineering
CS3490 — Computational Optimisation
CS3510 — Functional Programming and Applications

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