

# LI, KIN FUNG (CALVIN)

(+852) 68905323 ◊ Email: kfcaldvin@yahoo.com.hk

LinkedIn: <https://www.linkedin.com/in/calvin-kin-fung-li/>

## WORK/RESEARCH EXPERIENCE

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### RFID-based Indoor Localization for UGV

Jun 2022 - Present

*Student Researcher*

- Developed an RFID-based indoor localization system for unmanned ground vehicles (UGV)
- Studied and implemented kinematics model and path planning algorithms

### Proprietary Blockchain Data Analysis

Jun 2022 - Jul 2022

*Data Analyst*

- Data analysis and visualization of Ethereum AMM trading data
- Techniques: GraphQL, FFT, piecewise linear regression, etc.

### Flurry Finance

Jun 2021 - Feb 2022

*Software Engineer*

- Implemented **optimization of DeFi lending portfolio**, up to **2x return** of naive algorithm
- Programmed smart contracts and scripts for yield farming, staking, tokens, trading, price oracle
- Integrated with popular DeFi projects (Aave, Uniswap, Chainlink, etc.)

## EDUCATION

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### The Hong Kong University of Science and Technology (HKUST)

Sep 2019 - May 2024

*Dual Degree Program: BEng(COMP & ELEC) & BBA(GBM)*

- 3 majors in Computer Science, Electronic Engineering and Business, and 2 minors in Math and Robotics
- CGA: 3.94/4.3 (*top 3%*)
- Activities: Academic Secretary (DDPOC 2020-21), Student Ambassador (IPOSA 2020-21)

### Eidgenössische Technische Hochschule (ETH) Zürich

Feb 2022 - Aug 2022

*Semester Exchange: Computer Science*

- Grade: (pending)/6.0
- Member of *The Alternative*, a student society for technology, e.g. Linux, bash, console

### PLK Centenary LSC Mem. College

Sep 2013 - Jul 2019

- HKDSE: 5\*\* in Chinese, Math, M2, Physics, Chemistry and Economics, 5\* in English (*top 0.2%*)

## TECHNICAL SKILLS

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### Programming Languages Computer Science

Java, Haskell, C, C++, Solidity, Python, JS, TS, MATLAB, etc.  
OOP, Functional Programming, Algorithms, Formal Methods, ML,  
Smart Contract & DeFi, Database, Networking

### Electronic Engineering Finance

Signal Processing, Control Theory, Circuits, Embedded Systems  
Markowitz Portfolio, Factor Models, EMH, Asset Valuation

### Math

Discrete Math, Linear Algebra, ODE, Probability

(full portfolio at GitHub: <https://github.com/StardustLID/StardustLID>)

## EXTRA-CURRICULAR EXPERIENCE

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### Robocon Subteam, HKUST Robotics Team

Dec 2019 - Jun 2021

*Team Leader, Senior Hardware Engineer ← Junior Hardware Engineer*

- **Multiple champions** and awards in Robocon
- Managed robot R&D progress for 30+ mechanical, hardware and software engineers
- Prepared game plans for robotic archery (2021) and rugby (2020)
- Circuit design, routing, electronic R&D (laser ADC, regulators and converters, etc.)

### UBS Zürich HQ

Dec 2020 - Jan 2021

*Student Analyst (Team Captain, AI Developer)*

- Prototyped a ML-based **fintech startup prediction tool** with **70% accurate funding patterns**
- Data pipelining of *Crunchbase* dataset
- Models and methods: hypothesis testing, K-means, PCA, decision tree, regression

## PROJECTS

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### Formal Verification of Java Project

Spring 2022

*Rigorous Software Engineering @ETH Zürich*

- **Numerical** and **pointer analysis** in **polyhedra abstract domain**
- Handled arithmetic, boolean, branch and loop expressions on integers
- Tools used: Apron, Soot, SLF4J, Logback, JaCoCo, Maven, Docker

### Reliable Transport Layer

Spring 2022

*Computer Networks @ETH Zürich*

- Implemented **sliding window** over User Datagram Protocol (UDP) in C
- Reliable against packet loss, reordering, duplication and corruption
- Features: cumulative ACK, sender and receiver buffer, timer and retransmission

### Digital Audio Player (DAP)

Fall 2021

*Introduction to Embedded Systems @HKUST*

- Circuit design in Altium, programmed in C with STM32 toolchain
- DAP functionalities: MP3 and WAV support, audio codec and equalizer, FATFS file I/O
- Features: text-based UI, encoder, system clock, interrupt, button, LED

### Operation H (Top-down Shooter Game, Inspired by *Twilight Wars*)

Fall 2020

*Honors OOP and Data Structures @HKUST*

- Programmed in C++ with Qt as GUI framework
- Features: A\* path search, bullet trajectory and collision, map height system, camera
- Design patterns used: singleton, flyweight, strategy