# LI, KIN FUNG (CALVIN)

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## EDUCATION

**The Hong Kong University of Science and Technology (HKUST)**    Sep 2019 - May 2024
*Dual Degree Program: BEng(COMP & ELEC) & BBA(GBM); 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: 5.63/6.0
· Member of *The Alternative*, a student society for technology, e.g. Linux, bash, console

## RESEARCH INTERESTS

Matrix Phases, Phasal Analysis of MIMO Systems, Event-Triggered Estimation, Networked Control

## RESEARCH EXPERIENCE

**Matrix Phases**    Jun 2023 - Present
*Research Assistant to: Prof. Li Qiu*    *ECE@HKUST*
· Studied the sectorial and segmental matrix phases, accretive-dissipative theory, numerical ranges and extensions
· Propose algorithms and criteria for the computation of segmental phases

**Industrial Research: Link Adaptation in 5G URLLC**    Jun 2023 - Present
*Jointly supervised by Prof. Ling Shi and Dr. Yuchi Wu*    *ECE@HKUST*
· Migrate multi-armed bandit (MAB) algorithms to link adaptation settings in 5G URLLC

**Independent Study on Matrix Theory and Canonical Angles**    Dec 2022 - Feb 2023
*Research Assistant to Prof. Li Qiu*    *ECE@HKUST*
· Authored the extensions to the textbook for "ELEC5600: Linear-System Theory" at HKUST
· Content: unitarily invariant norms, perturbation theory, canonical angles, Grassmann space and metrics

## WORK EXPERIENCE

**Flurry Finance**    Jun 2021 - Feb 2022
*Software Engineering Intern*
· Implemented on-chain 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

## HIGHLIGHTED TECHNICAL SKILLS

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|---|---|
| **Programming Languages** | Java, Haskell, C, C++, Solidity, Python, JS, TS, MATLAB, etc. |
| **Computer Science** | OOP, FP, ML, DB, Algorithms, Formal Methods, Blockchain, Networking |
| **Electronic Engineering** | Control Theory, Signal Processing, Embedded Systems, Circuits |
| **Economics & Finance** | Econometrics, Portfolio Theory, Derivatives, DeFi |

## PROJECTS AND LEADERSHIP

**T&M Prototyping: AI for Credit Rating Migration and Spread Prediction**    Jun 2023 - Aug 2023
*Student Developer (Team Leader and MVP)*
· Prototyped an ML-based bond portfolio dashboard for credit rating and spread prediction
· Presented solution to a panel of director-level traders, porfolio managers and corporate bankers
· Data preprocessing of financial statements, ratings, bond data of OECD banks, and macroeconomic indicators
· Feature engineering and selection with time series; Stratified and walk-forward validation of models
· XGBoost for rating classification and migration; Autoregressive exogenous (ARX) model for spread prediction

**T&M Corporate Consulting: Google and Open Data Strategy for HKT**    Feb 2023 - May 2023
*Student Consultant & Developer (Best performing team; Team Leader and MVP)*
· Provided consultation to HKT Digital Out-of-Home (DOOH) business unit
· Presented solution to HKT executives, Google Cloud HK engineering team, and TalentLabs cofounders
· Deliverables: geospatial analysis, dashboard app, consultation report and presentation

**Robocon Subteam, HKUST Robotics Team** Dec 2019 - Jun 2021
*Team Leader & Hardware Engineer*
· Multiple champions and awards in Robocon (2021: archery, 2020: rugby)
· Managed 30+ mechanical, hardware and software engineers, performed circuit design and electronics R&D

**T&M Prototyping: Financial Investment Prototyping for UBS Zürich** Dec 2020 - Jan 2021
*Student AI Developer (Team Leader)*
· Prototyped a ML-based fintech startup prediction tool with 70% accurate funding patterns
· Data pipelining, hypothesis testing, K-means, PCA, decision tree, regression