KEVIN, LIN ZHAORUN

MPhil student in CS

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SUMMARY

I'm a year 1 MPhil student in the Hong Kong University of Science and Technology (HKUST) major in Computer Science. I'm a pround member My research interest lies within the intersection of blockchain and cryptography.

SKILLS

Langauges: Solidity, Python, JavaScript, HTML, C++, C.

Technologies: Blockchain, Cryptosystems, Django, Artificial Intelligence, Computer Vision.

EDUCATION

09/2023 – Present
MPhil in Computer Science — **HKUST**
- Supervisor: Prof. Amir K. Goharshady
- A member of the ALPACAS Research Group

09/2019 – 07/2023
BEng in Computer Engineering — **HKUST**
- Minor in Big data Technology
- Awarded the 2019-2020 HKUST School of Engineering Scholarship

PUBLICATIONS

ICBC'24
Blind Vote: Economical and Secret Blockchain-based Voting — **(Under Review)**
A.K. Goharshady, Z. Lin

PROJECTS

09/2023 – 01/2024
Blockchain-based E-voting system using Blind Signatures
Designed and implemented a voting system on blockchain (Ethereum) by utilizing the technique of blind signature. The protocol achieves untraceable anonymity and other properties such as verifiability, transparency, completeness, etc., while being at least 40% more efficient than other existing e-voting systems in terms of gas cost.

02/2023 – 05/2023
3-party Random Number Generation on Ethereum — **Github**
Designed and implemented a protocol that achieves uniformly random number generation on blockchain. The project scenario is a betting game and the three parties (bettor, casino, and authority) can work together to generate a truly uniformly random number that is tamper-proof by following this protocol. This number can then be used in the game.

08/2022 – 05/2023
Advanced Video Analytics for Smart Carpark — **Github**
Built a vacancy detection system for carparks using fisheye cameras and computer vision technologies. By applying transfer learning of the state-of-the-art yolov5 model, it achieves a wider angle of detection with high accuracy.

INTERNSHIPS

07/2023 – 09/2023
Research Assistant — **Prof. Gary Chan's Lab, HKUST**
- Optimized code for edge use.
- Worked on a carpark vacancy detection system for smart carpark and fall detection system for elderly.
- Set up Ubuntu OS and environments on edge devices such as OrangePi Mini computer and Jetson Orin NX board for testing use.

`Edge AI / CUDA / cv2 / Yolov8`

07/2022 – 09/2022
AI & Data Engineering Intern — **Baronford & Associates**
- Developed MERN (MongoDB, Express, React Node.js) stack app that supports basic CRUD applications for recording patient information.
- Exploratory data analysis on patient datasets to draw meaningful insights.
- Built random forest regression model on predicting patient vitals, optimized model using automated hyperparameter tuning by GridSearchCV.
- Data augmentation of the patient dataset using SMOTE, RandomOversampler and GaussianCopula from SDV. Synthesized data has a high similarity of >95% in distribution and <0.5 of bivariate correlation difference.

`MERN Stack / EDA / Random Forest Regression / Data Augmentation`

12/2021 – 02/2022

Junior Developer **Radiance Tech International Ltd.**

- Implemented a webpage for the company using HTML, JavaScript, and CSS.
- Continuously improved the prototype interface and optimized user experience through trial and error and user feedback.
- Worked in a team to build and fine-tune a Cantonese voice recognition system using DeepSpeech and CommonVoice corpus.

`HTML / JavaScript / CSS / Voice Recognition System`

FELLOWSHIPS

09/2023 – Present

Postgraduate Studentship **HKUST**
HK$18390/month

AWARDS

06/2023 **Professor Samuel Chanson Best FYP Award**

06/2023 **Industry Sponsored Best FYP Award**

11/2019 **Dean of Engineering Scholarship**

COMPETITIONS

02/2022 – 03/2022

Sony Tactile Technology Challenge 2022 **National Top 50**

- *Project Theme:* Apply Mixed Reality technology to museums to realize a full-scene virtual visual, auditory, and tactile experience for visitors.
- *Technical leader* of the team, responsible for analyzing cutting-edge technologies such as VR, AR, and haptic technology, and providing solid technical support by explaining the hardware and technical principles involved in the proposal.
- The proposal effectively grasps the user's pain points and successfully ranks among the top 50 in China for its leading creativity and feasibility.