Wenxing Duan

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Education

the University of Edinburgh 09/2023 - 12/2024
Master of Science in Cybersecurity, Privacy and Trust

the University of Edinburgh 09/2019 - 06/2023
Bachelor of Science in Computer Science *First Class Honours*

Professional Experience

Laboratory for Foundations of Computer Science | *Junior Research Assistant* 06/2023 - 08/2023

- Conducted a comprehensive analysis of quantum computing, building on previous dissertation work. This research focused on examining experimental data from Google's Sycamore 53-qubit quantum computer, aiming to provide deeper insights.
- Identified significant patterns and anomalies in Fourier weight outputs during the initial phase of the research, which highlighted potential discrepancies in large qubit analysis and indicated areas that warranted further exploration.
- In a subsequent study, delved deeper into these anomalies to understand the underlying causes and their implications. The effort involved rigorous data analysis, which led to pivotal observations for the field of quantum computing.
- Further developed analytical methods, refining those used in the initial dissertation. This advanced stage of research aimed to establish relationships between quantum system dynamics and specific parameters, enhancing the depth and applicability of the findings. These results are poised to be published in an upcoming paper.

Nethermind | *Cryptography & Blockchain Research Intern* 06/2022 - 09/2022

- Participated in the protocol research of the next phase of the Lido project
- Studied and analysed current mainstream oracle protocols, including DECO, Town Crier, Chainlink, Provable, etc.
- Participated in the research of decentralized identity (Decentralized Identity), and learned and analyzed other feasible solutions for on-chain identity, including CanDID, soulbound token, verifiable credentials, etc.
- Learned the relevant knowledge of zero-knowledge proof and participated in the formulation of the trustless verification framework scheme for the next stage of Lido.
- Wrote a smart contract to measure the performance of ETH2.0 validators using the Provable oracle.
- Improved proficiency in Solidity; grasped the most advanced trustless oracle model in the industry, improved understanding of zero-knowledge proofs, and learn about the latest developments in the field of decentralized identity.

Huazhong University of Science and Technology | *Summer Research Intern* 06/2021 - 09/2021

- Participated in "China Software Cup" as a member of the Huazhong University of Science and Technology team
- Coordinated the 4-person team in the project "Hazardous Agricultural Pest Recognition System", which earned us National Second Prize
- Studied and researched the academic literature on cutting-edge research into fine-grained recognition with Associate Professor Tang He
- Developed an identification system of harmful agricultural pests based on fine-grained identification
- Responsible for back-end development and machine vision development
- Mastered knowledge of back-end development, improved knowledge of database SQLite, grasped the principles and applications of machine vision
- Utilized Python, TensorFlow, PyTorch, Recurrent Attention Convolutional Neural Network, SQLite

Shanghai Zhuofan Technology Co., Ltd. | *Backend Development Intern* 06/2020 - 09/2020

- Participated in the backend service and system maintenance of Xiangyang Municipal Affairs Service Network
- Assisted senior engineers in the development and maintenance of the "Hubei Government Affairs Approval Platform" project
- Assisted in testing a number of new functions including automatic query webpage generation, data transfer.
- Supported senior engineers by processing, analyzing, and cleaning platform data using Python script.
- Participated in testing the database of the Xiangyang government's mobile staff management app "Ehuiban"
- Improved understanding of the production and testing processes of regular software manufacturers an grasped the operating principles of numerous website backgrounds

Skills

Professional Skills: Python, Solidity, C, Java, Cairo, SNARK/STARK, Chainlink, Provable, Flask, Springboot, LaTeX, Haskell
Languages: English, Chinese
Interests: Cryptography, Blockchain, ZKP, Ethereum/EVM, Quantum Computing, Deep Learning, NLP, AIGC, Archery

Academic Awards

- **China Software Cup** | *Second Prize* 09/2021
- **Canadian Programming Competition** | *Top 5%* 03/2019
- **Euclid Mathematics Contest** | *Top 5%* 03/2019
- **Australian Mathematics Competition** | *First Prize* 11/2018
- **National Youth Robot Competition** | *5th Place* 09/2015