Wenxing Duan

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Education

the University of Edinburgh 09/2023 - 09/2024
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

- Undertook a comprehensive quantum computing analysis, building upon my prior dissertation, under the expert guidance of Dr. Raul Garcia-Patron Sanchez. The work aimed at providing deeper insights into experimental data sourced from Google's pioneering Sycamore 53-qubit quantum computer.
- In my previous research, significant patterns and anomalies in Fourier weight outputs were identified, highlighting potential discrepancies in large qubit analysis and illuminating areas for further study.
- My subsequent study pivoted towards these anomalies, aiming to understand and elucidate the underlying causes and their implications. This investigative endeavor encompassed rigorous data analysis, leading to insightful observations pivotal for quantum computing research.
- Beyond addressing prior findings, I ventured into refining analytical methods from my dissertation. A particular focus was establishing relationships between quantum system dynamics and specific parameters, enhancing the depth and applicability of my research outcomes.

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/ Programming Languages: Proficient in Python, Flask, Solidity, C, Java, Haskell, LaTeX, all Microsoft Office suite applications, Premiere, After Effects, Audition, Photoshop
Languages: English, Chinese
Interests: Cryptography / Blockchain fanatic, machine vision, monitoring financial markets, ZKP, compilers, travel encompassing EU/USA/Asia, 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