WANG, YUJIE (JAYE)

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EDUCATION

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY (HKUST) **HONG KONG**

Bachelor of Science in Data Science and Technology *2017-2021*

GPA*: 4.097/4.3(top 1%) | Dean's List*

Courses Taken: Principle of Cybersecurity, Compiler Development, Operation System, Computer Network, Computer Organization, Full Stack Web development, Machine Learning, Regression Analysis, Probability, Game Theory

WASHINGTON UNIVERSITY IN ST. LOUIS (WUSTL) **ST. LOUIS, USA**

International Student Research Internship Program *Summer 2020*

THE UNIVERSITY OF SOUTHERN CALIFORNIA (USC) **LOS ANGELES, USA**

International Student Exchange Program *Spring 2020*

RESEARCH EXPERIENCE

"PRIVACY-PRESERVING PROGRAM ANALYSIS WITH HOMOMORPHIC ENCRYPTION"

Final Year Thesis *Aug 2020 – Present*

- Explore the feasibility of the analysis of encrypted program
- Design algorithms for Homomorphic Encryption to be used in Pattern Matching, Program-Embedding-Based Similarity Analysis and Code Coverage Analysis
- Analyze the complexity of the proposed algorithms
- Supervised by Prof. WANG Shuai, Department of Computer Science & Engineering, HKUST

"LARGE-SCALE EVALUATION OF THE SECURITY OF COMPUTER-AIDED DIAGNOSIS SYSTEMS"

International Student Research Internship Program at Washington University in St. Louis *May 2020 – Present*

- Implement multiple attacks targeting existing CADs with proposed real-world scenarios, where the attackers can cause misdiagnosis or leakage of patients' information
- Examine the efficiency of multiple defenses and give out advice to help to secure the CADs
- Supervised by Prof. ZHANG Ning, Department of Computer Science & Engineering, WUSTL
- As a core researcher in this summer research project, I am targeting a top tier cybersecurity paper. This project is aimed at demonstrating the real-world threats towards existing medical AI systems, and give out advice to help to secure the CADs.

"IMPROVEMENT OF AN APPROXIMATED SELF-IMPROVING SORTER AND ERROR ANALYSIS OF ITS ESTIMATED ENTROPY"

Undergraduate Research Opportunity Program, HKUST *Sep 2019 – Dec 2019*

- Designed a generalized algorithm to improve the existing self-improving sorters,
- Implemented the sorter and compared the experiment results with theoretical values
- Completed a draft as the first author: *https://arxiv.org/abs/2001.05451*
- Supervised by Prof. CHENG Siu-wing, Department of Computer Science & Engineering, HKUST

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WORK EXPERIENCE

UNIVERSITY OF BRISTOL **UK**

Summer Research Internship – Biological Statistic *Jun 2019 – Sep 2019*

- Initiated research project: "Identifiability of IBS and PBWT for Demographic Reasoning"
- Proposed a statistical approach to extract informative signals from large genetics data for demographic reasoning
- Conducted research to study the informatics difference between IBS and PBWT
- Reconstructed the population structure from population genetics data using nonparametric regression method
- Supervised by Dr. Feng YU and Dr. Daniel Lawson, Department of Mathematics, University of Bristol

AWARDS & HONORS

- ***Scholarships***: University's Scholarship for Continuing UG Students, HKUST Admission Scholarship, Overseas Exchange Scholarship, Hong Kong & Qingdao Association Scholarship
- ***Awards*:** The Epsilon Fund Award in 2019, HKUST Outstanding Academic Performance Award

SKILLS & INTERESTS

- ***Technical***: Javascipt, SQL, LLVM, Php, CSS, C++, Java, Pytorch, Tensorflow, Python, OpenCV, Matlab, Keras
- ***Languages***: English (Fluent) and Mandarin (Native)
- ***Interests***: Computer and Software Security, Program Analysis, Adversarial Machine Learning
- ***Self-study***: Computer System: A Programmer's Perspective, Information Security: Principles and Practice, Pattern Recognition and Machine Learning (PRML)