

WANG, YUJIE (JAYE)

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EDUCATION

THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY (HKUST)

HONG KONG

Bachelor of Science in Applied Mathematics, Bachelor of Science in Data Science

2017-2021

GPA: 4.097/4.3(top 1%) | Dean's List (four consecutive semesters)

Coursework: The 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 SOFTWARE SECURITY ANALYSIS”

Final Year Thesis

Aug 2020 – Present

- Deploy program encoding methods such as Cod2vec
- Design program embedding encryption scheme with Homomorphic Encryption
- Analyze the security of the encrypted program with deep learning
- Supervised by Prof. WANG Shuai, Department of Computer Science & Engineering, HKUST

“LARGE-SCALE EVALUATION OF THE SECURITY OF COMPUTER-AIDED DIAGNOSIS ALGORITHMS”

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 patient information leakage
 - Experiment the efficiency of multiple defenses and give out advise to help 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 real-world threats towards existing medical AI systems, and give out advise to help 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 extend existing self-improving sorters
- Implemented the sorter and compared the experiment result 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

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

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