

# YUDAN TANG

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## EDUCATION

### University of Hong Kong

Hong Kong SAR, China

*B.Sc. in Statistics & Computer Science*

*Expected Jun. 2022*

- Cumulative GPA: 3.83/4.30, Major GPA: 3.94/4.30
- Dean's Honour List (2019 – 2020, 2020 – 2021)

### University of California, Berkeley

Berkeley, CA, USA

*Summer Session*

*Jun. 2019 – Aug. 2019*

- Term GPA: 3.65/4.00
- Course work: Linear Algebra and Differential Equation (A+); General Biology (B+)

## RESEARCH EXPERIENCE

### University of Hong Kong

Hong Kong SAR, China

*Research Assistant (PI: Prof. Stephen Lee)*

*Jun. 2021 – Present*

- Theoretically proved that combining semi-supervised learning methods with non-parametric techniques (kernel regression) can reduce the asymptotic Mean integrated square error (MISE) from  $O(n^{-\frac{4}{5}})$  to  $O(n^{-\frac{16}{19}})$  with numerical support.
- Applying this idea to the projection estimator and reproducing kernel Hilbert space (RKHS).

### University of Hong Kong

Hong Kong SAR, China

*Research Assistant (PI: Dr. Wentao Li)*

*Jan. 2021 – Jun. 2021*

- Applied Approximate Bayesian Computational algorithms with the auxiliary likelihood function to better estimate the parameters in the stochastic models, especially for high dynamic models.
- Proposed a more efficient algorithm by adding weights on the datapoint with minimum summary distance.
- Improved time complexity, root mean square error (RMSE) and the variance of parameters in stochastic models.

### University of Hong Kong

Hong Kong SAR, China

*Research Assistant (PI: Dr. Zhonghua Liu)*

*Oct. 2020 – Jan. 2021*

- Summarized data from 16 research papers on the expression of T-cell and the mutation of MHC-peptide allele.
- Created a pre-train model of the collected information with the pVACfuse package on Linux system.

### Zhejiang University

Hangzhou, China

*Research Assistant (PI: Dr. Xin Hong)*

*Dec. 2019 – Jan. 2020*

- Analyzed and proofread thousands of pieces of data to study the released and clarified dates of false information on the Internet.
- Attempted to find the relation between margin trading behaviors and the clarification of false information.

## SKILLS

- Development: Python, C/C++, Java, Photoshop
- Frameworks: Pytorch, TensorFlow, Scikit-learn, tkinter, OpenCV
- Scientific Computation: R, MySQL, VBA, Latex, abcpmc, CmdStan
- Language: Mandarin (native), English (fluent), Cantonese (intermediate)

## WORKING EXPERIENCE

### University of Hong Kong, Faculty of Engineering

Hong Kong SAR, China

*Teaching Assistant*

*Sep. 2020 – Dec. 2020*

- Offered help for 200+ students in *Computer Programming* (COMP1117) during class and held 5+ office hours per week.

### Kubid Research

Hong Kong SAR, China

### *Quantitative Research Winter Intern*

*Dec. 2020 – Jan. 2021*

- Ruled out the noises collected in the daily stock return, suggested three different models, and constructed the Bayesian posterior distribution for the parameters to predict the change point. All those three models got incorporated into the existing frameworks in the company.
- Applied *CmdStan* (a language based on R and C++) to perform the Markov Chain Monte Carlo (MCMC) simulation and derive the posterior distribution for the parameters.

### **Full Harvest Asset Management**

Hangzhou, China

### *Quantitative Analyst Intern*

*Jul. 2020 – Aug. 2020*

- Cleaned and visualized millions of data on information in the stock market from 2014 to 2020 using VBA and R.
- Analyzed financial features (turnover rates, etc.) of stocks in various areas to create profitable investment strategies.

## **CLASS PROJECTS**

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### **HELOC Loan Predictor, Python** (STAT3612: Statistical Machine Learning)

*Sep. 2020 – Dec. 2020*

- An interpretable machine learning model (IML) for Home Equity Line of Credit (HELOC) loan Dataset with 74.9% accuracy using a proposed algorithm *partially connected GAM*, higher than the 74.04% benchmark result on Kaggle.

### **Student Mini Portal, Python/MySQL** (COMP3278: Introduction to Database)

*Feb. 2021 – May 2020*

- An Intelligent Course Management System (ICMS) with all the related course information and interactive functions (checking weekly time schedule, receiving news announcement, etc.) and face recognition-based login.

## **SERVICE, LEADERSHIP AND VOLUNTEER EXPERIENCE**

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### **University of Hong Kong, Faculty of Science** | *Student Peer Adviser* | *Aug. 2020 – present*

- Advising around 20 freshmen in HKU to help them succeed in both academic and personal lives.
- Hosted a welcoming session for Faculty of Science students to introduce the university and the major structure.
- Awarded as the outstanding student peer adviser of 2020 and gave a sharing with 100+ students attended.

### **University of Hong Kong, Faculty of Engineering** | *Student Coordinator* | *Sep. 2020 – Dec. 2020*

- Helped students form study groups.
- Resolved concerns and complaints about courses by communicating with instructors, tutors, and students.

### **HKU Student Ambassador** | *2019 – 2020*

- Assisted the Administrations Office to advocate (organized briefing sessions with 50+ students attended) and enroll new students (provided online assistance for freshmen).

### **HKU Brainstem Student Society** | *Academic Secretary* | *2019 – 2021*

- 1st executive committee member of this student society, aiming to increase STEM students' competence.
- Held activities such as career talks, programming study groups, and professor-student casual chats jointly held by Academic Advising Office (HKU).

### **HKU Beyond the Pivot Student Society** | *Publicity Secretary* | *2018 – 2019*

- Designed 5+ posters and 2 videos to promote activities of the society.
- Assisted 2 open house sessions, each with 50+ students attended.
- Volunteered in the winter of 2019 for one week to teach in Hainan Province, China, to provide guidance on career planning and care the mental health of stay-at-home students.

### **World Wildlife Fund HK, OPY Programme** | *Volunteer* | *2019 – 2020*

- Participated in 5 environmental-protecting activities, like wildlife tracking and garbage recycling on the sea bench.
- Analysed the occurrence of endangered species like Eurasian Otter and Leopard Cat (time, location, number of photos detected, etc.)