

Facheng Yu

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EDUCATION

University of Washington – Seattle, WA, USA

2023-2025(expected)

Master of Science (expected) in **Statistics**

- Cumulative GPA: **4.0**/4.0.
- Relevant Coursework: Statistical Learning; Statistical inference; Design and Analysis of Experiments.

Wuhan University - Wuhan, China

2019-2023

Bachelor of Science in **Mathematics and Applied Mathematics**

- Cumulative GPA: **3.84**/4.0.
- Probability (96/100), Stochastic Process (95/100), Real Analysis (90/100), Functional Analysis (92/100), Advanced Algebra (94/100), Machine Learning (88/100), Differential Geometry (99/100).

RESEARCH EXPERIENCE

Undergraduate researcher

08/2022-01/2023

University of North Carolina at Chapel Hill; working with prof. Guanting Chen

- Researched the problems and classic models in online learning.
- Finished a report about Blackwell's approachability and its applications.

Undergraduate researcher

04/2021-08/2022

Wuhan University; working with prof. Yidong Lou and prof. Weixing Zhang

Project: A Precipitation Prediction System Based on Machine Learning and Multi-source Data

- Researched the threshold method with the water vapor, including analyzing the related work in the rain nowcast, proposing ideas for improvement, and testing the effects.
- Gave a clear description of the rain events to help define the evaluation indexes, and achieved 92% average correct rate.

Undergraduate researcher

10/2021-01/2022

Computer Vision & Remote Sensing Lab, Wuhan University; working with prof. Jian Yao

Project: The Application of Deep Learning in Multi-view Commodity Recognition

- Transferred the models for face recognition into commodity recognition and then the supervised contrast learning.
- Proposed a weighted method for the retrieval in the embedding space, successfully achieving a Top-5 accuracy of nearly 100% for the recognition in videos.

ADDITIONAL EXPERIENCE

Integrating single-cell Hi-C and single-cell RNA sequencing data

09/2023-09/2023

Genome Sciences Hackathon at Noble Lab, University of Washington

- Compare and contrast the integration performance of UnionCom and MMDMA between single-cell RNA and three different single-cell Hi-C representations (CDP, LDA, HiCRep).

Video Summarization with Flexible Multi-agent Reinforcement Learning

07/2021-08/2021

Project-based Learning in Artificial Intelligence, University of Cambridge

- Helped explain the deep reinforcement learning structures and corresponding formulas to group mates.
- Built a LSTM to generate the policy and optimized the model with the Monte Carlo method.

Balanced Network Models of Cortical Circuits

01/2021-02/2021

Online Winter Program in Theoretical Neuroscience, University of Cambridge

- Solved the linear system to get the theoretical mean and variance of the neurons' spiking based on the leaky integrate-and-fire model.
- Implemented the code to simulate the interactions of the excitatory, the inhibitory, and the external neuron population.

Examples and Exercises of Big Data Analysis

06/2020-08/2020

Online Summer School, Yau Mathematical Sciences Center, Tsinghua University

- Finished several projects, including the crowd simulation with agent-based modeling, the ticket prediction with multiple linear regression, ingredient proportion with adjacent interpolation, and industrial quality control with SVM.

SCHOLARSHIPS AND HONORS

- Asia and Pacific Mathematical Contest in Modeling (Third Prize), 2022
- The Chinese Mathematics Competition (Third Prize), 2020, 2021
- Excellent Student Scholarship, Wuhan University, 2020, 2021, 2022

SKILLS

- Computer skills: Proficient in Python; familiar with MATLAB and R.
- Languages: English (fluent) and Chinese (native).