Facheng Yu

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EDUCATION

Wuhan University - Wuhan, China 08/2019-06/2023

Bachelor of Science (expected) in **Mathematics and Applied Mathematics**

- Cumulative GPA: **3.84**/4.0, **90.3**/100.
- Coursework: 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).
- Honors & Awards:

  Asia and Pacific Mathematical Contest in Modeling (Third Prize) 2022

  The Chinese Mathematics Competition (Third Prize) 2020&2021

  Excellent Student Scholarship of Wuhan University 2021&2022

RESEARCH EXPERIENCE

Blackwell's Approachability and Online Learning 08/2022-01/2023

Department of Statistics and Operations Research, 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.

A Precipitation Prediction System Based on Machine Learning and Multi-source Data 04/2021-09/2022

Undergraduate Innovation Project at Wuhan University; working with Prof. Yidong Lou and Prof. Weixing Zhang

- 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.

The Application of Deep Learning in Multi-view Commodity Recognition 10/2021-01/2022

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

- 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.

ACADEMIC PROJECT EXPERIENCE

Video Summarization with Flexible Multi-agent Reinforcement Learning 07/2021-10/2021

*Remote Project-based Learning in **Artificial Intelligence**; University of Cambridge*

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

Balanced Network Models of Cortical Circuits 01/2021-02/2021

*Remote Project-based Learning 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.

ACTIVITIES

Journalist, New Media Center, Wuhan University 09/2020-06/2021

- Interviewed standouts, recorded big events on campus, and wrote articles on the school's WeChat official account.

SKILLS & INTERESTS

- Language proficiency: Native in Chinese Mandarin; fluent in English.
- Computer skills: Proficient in Python; familiar with MATLAB.
- Hobbies: Swimming and mini-Marathon.