Yida Wang 917-892-9858 | yw3774@cumc.columbia.edu

Education

Hunan University (HNU) **Changsha, China**
Bachelor of Science in *Information and Computing Science* **09/2017-06/2021**
Skills: C, Python, Matlab, R, MySQL
Honors: Individual Scholarship (2019), Scholarship for Outstanding in Competition (2020)
Mailman School Of Public Health, Columbia University
Master of Science in Biostatistics, expected 2023 **09/2021-Present**

Academic Highlights

Distributed Optimization Based on Neurodynamics **06/2019-06/2021**
Team Member, *Supervisor: Prof. Zhenyuan Guo*
- ✓ Established differential equation models according to optimization problems and established the corresponding KKT system
- ✓ Adopted neural dynamics and RNNs to find the global optimal solution
- ✓ Proved the uniform convergence of the algorithm based on Lyapunov stability and Russell invariant principle
- ✓ Conducting numerical simulation with Matlab to verify the correctness of optimization algorithms and explain the advantages

The Prediction and Analysis of the Mechanisms of Action of Drugs with Python **10/2020-12/2020**
- ✓ Conducted and visualized the correlation analysis and Principal Component Analysis of the variables through Sklearn, Seaborn and Plotly based on underlying biomedical knowledge
- ✓ Carried out visualized analysis of the MoA of drugs from two perspectives and further studied the correlation of different MoAs
- ✓ Employed LDA, QDA, Bayesian Methods and multi-label classification method based on KNN to predict the scores of MoAs of drugs

Machine Learning for Computer Networking, UChicago Online Research Program **07/2020-09/2020**
- ✓ Studied knowledge related to machine learning, neural networks and principles of network encryption and interception
- ✓ Preprocessed the Boston house price dataset with Python; employed logistic regression and linear regression to construct model with PyTorch; evaluated the model with the confusion matrix and optimized the accuracy
- ✓ Assisted in the data preprocessing and multi-layer perceptron construction to complete the traffic classification over DNS and DoH with the accuracy of 98%

Campus Sports Database Design with MySQL **02/2020-06/2020**
- ✓ Designed two sub-systems of the database: information query platform and schedule management system
- ✓ Designed the ER diagram according to functional requirements and data structure and optimized relational schema based on the 3rd Normal Form to get base tables that satisfy integrity constraints
- ✓ Limited the query response time within 1s and ensured the database security by setting permissions for different users

Business Data Analysis, CMU Remote Summer Research Program **07/2019-08/2019**
- ✓ Studied the process of business analysis, including data mining, data processing and data analysis
- ✓ Set up the optimal housing plan of a virtual character according to his income and family demands with rapid miner
  - Filtered out the missing values and invalid values with Rapid Miner to ensure the consistency of the housing data
  - Analyzed the housing demands with Decision Trees and located the best community with Cluster Analysis

Competitions

Research on Solutions to Reducing the Impact of Global Warming on Fishing Industry in Scotland 02/2020
Mathematical Contest in Modeling, Problem B, *Advisor: Prof. Zhengyuan Guo*
- ✓ Constructed Grey Forecast Differential Equation Model with Matlab to predict the sea surface temperature and new habitat of herring and mackerel
- ✓ Calculated the maximum fishing range of two ports based on the maximum radius method and predicted the fishable year with Grey Model
- ✓ Analyzed the catch quantity, profits and costs through the random number model and proposed to establish offshore bases to reduce the impact of the fishing industry

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Research on the Cooperation Strategy in a Team Sport **09/2019**

National 2nd Prize & Provincial 1st Prize, China Undergraduate Mathematical Contest in Modeling, *Supervisor: Prof. Guoqiang Peng*

- ✓ Employed ordinary differential equation to find the relationship between the speed and time of the volleyball and the drum
- ✓ Used the variable upper limit integral to solve the falling time of the volleyball and the rising time of the drum
- ✓ Simulated and optimized the collision and movement process of the ball and drum in Matlab

Professional Experiences

HFT Investment Management Co., Ltd **Shanghai**

Intern, Marketing Department 08/2019

- ✓ Collected the daily closing and opening prices of A Fund and those of the Shanghai Composite Index on the corresponding date from funds database with Rapid Miner
- ✓ Drew line charts with Rapid Miner and analyzed the price trend of A Fund by comparing the price trend with the Shanghai Composite Index
- ✓ Calculated automatic investment returns of A fund in Excel and formulated a reasonable investment plan for clients