Siyan Wang

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EDUCATION

Huazhong Agricultural University (HZAU) — ***Hubei, China***
Bachelor of Science in Information and Computation Science — *09/2018-06/2022*

- Course: Mathematical Analysis, Numerical Approximation, Optimization Theory and Method, Applied Time Series Analysis
- Overall GPA: 3.78/4.0
- Rank: 5/91

University of Wisconsin Madison (UW-Madison) — ***WI, USA***
Master of Statistics and Data Science(MSDS) — *09/2022-Now*

- Course: Statistical Learning, Statistical Method, Introduction to Statistical Inference, Introduction of Deep Learning, Data Science Computing Project.
- GPA(so far): 3.73/4.0

AWARDS & PRIZES

- National Scholarship, HZAU ***(Top 1%)*** — ***2019***
- Excellent Students, HZAU ***(Top 10%)*** — ***2019 & 2020 & 2021 & 2022***
- National Third Prize of The 11th National Mathematics Competition for College Students — ***11/2019***
- Third Prize of "Huashu Cup" National Mathematical Contest in Modeling — ***08/2020***

ACADEMIC EXPERIENCE

Research Leader, *College of Science*, *HZAU*
Study on the Characteristics of Medical Soft Tissue Based on Fractal Dimension
(Provincial-level research project)

- Leading a 5 people research group, I tried to distinguish the different lung diseases(COVID-19 and lung cancer) on CT image through its fractal dimension(FD). The whole dataset contains over 10k images, we calculated FD by several different methods on each whole lung CT image and lung parenchyma after image processing. We trained different machine learning models on binary classification, including neural network classifier, Support Vector Machine and K-means cluster. Finally we founded that SVM was the most effective classifier, with 96% of accuracy. — ***10/2019-05/2022***

Research Assistant, *College of Engineering, HZAU*
Study on Drought Stress of Fruit and Vegetable Seedlings

- We tried to determine whether plants are lack of water through the outcomes including leafs color, shape and height. To achieve that,we collected depth images and RGB images from different angles using Kinect tool and infrared camera. We calculated the FD of each image and found the relation between water content and FD. — ***12/2020-09/2021***

PUBLICATION

- *A Multi-Scale Stiffness Fractal Model Of Joint Interfaces*, Jingfang Shen, Sijie Cheng, **Siyan Wang** and Wenwei Liu (Co-authors), *Russian Physical Journal*, 2019

RESEARCH PROJECTS

Body fat prediction analysis in different age group
Course Project, UW-Madison

- Built predictive models for estimating body fat using diverse physiological features, and analyzed the distribution of body fat in different age group people. — ***10/2023***
- Revamped the ShinyApp to visually showcase prediction results, creating an engaging and interactive website for prospective users.
- Responsible on pioneering the concept and execution of age group analysis and ShinyApp construction.

Fruit Classification based on various models and activation functions
Course Project, UW-Madison

- Implemented Multilayer perceptron (MLP) and Convolutional Neural Networks (CNN) for classification on a dataset composed of 10 classes of fruits and investigating the performances of MLP and CNN. — ***05/2023***
- Undertook the construction of CNN model, adapting famous AlexNet to fit fruit image classification.Fine-tuning the CNN model's parameters and optimizing its hyperparameters, including kernel sizes, pooling layers, and activation functions.
- Responsible of building and modifying models, comparing effeciency.

Application of Multidimensional Scaling Algorithm (MDS)
Course Paper, HZAU

- Verified the feasibility of MDS in data visualization where I displayed the relative positions of each point on the two-dimensional coordinate plane based on the distance matrix between the cities in USA, and compared the results with that on the map. — ***09/2020-01/2021***
- Explored the two-dimensional image of outlier data after MDS algorithm dimensionality reduction, reached the conclusion that the visibility of MDS algorithm is no longer accurate under partial outliers. And evaluated the usage conditions.

PROJECT TRAINING

University of Oxford, Exeter College

Global Leadership Programme ***08/2019***

- Proposed a company acquisition programme, won the first place in the final project presentation.
- Learned International Economics, Game Theory, Globalization.

Huazhong Agricultural University

Mathematical Modeling Training ***07/2021-08/2021***

- Mastered several classic optimization problems, including Traveling Salesman Problem and Cutting Stock Problem;
- Grasped the solution methods of differential equations, established and solved differential equations, and obtained general or special solutions of the problems through independent learning;
- Manipulated machine learning methods for classification and predictions.