Xinyi Xie

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EDUCATIONS

China Agricultural University (CAU)   **Beijing, China**

B.S. in **Computer Science and Technology** (Expected)   Sep. 2019~Present

❖   GPA: **3.7**/4.0

❖   Computer Skills: C/C++, Python, C#

❖   Language Skills: TOEFL: **92**

HONORS & AWARDS

2020-2021 Merit Student, CAU	Nov. 2021
2020-2021 Academic Second Class Scholarship, CAU	Nov. 2021
First Prize of Beijing in the Contemporary Undergraduate Mathematical Contest in Modeling	Oct. 2021
Third Prize of Class C in the 2021 National English Competition for College Students	May 2021
2019-2020 Academic Third Class Scholarship, CAU	Nov. 2020
Third Prize of 30th Advanced Mathematical Contest (for Non-mathematical Major), CAU	Nov. 2020
First Prize of the 2019 "FLTRP·ETIC Cup" English Reading Contest (Preliminary Competition), CAU	Sep. 2019

RESEARCH EXPERIENCE

Innovation and Entrepreneurship Training Program for College Students, *National-level project*

Research on Mass Estimation Method of Fish Based on Binocular Vision

Academic Advisor: Prof. Qingling Duan   Dec. 2021~Present

➢   Aimed to build a fish mass estimation model using binocular vision and machine learning technology to realize non-invasive, fast, and convenient estimation, which could support digital management of aquaculture production.

➢   Planned to complete the sub-tasks of image acquisition and pre-processing, binocular stereo vision ranging, fish feature extraction, and fish prediction model establishment by using image segmentation algorithms and building neural network models, etc.

➢   Responsible for data acquisition, cleaning and feature extraction using OpenCV library.

Undergraduate Research Program (URP), China Agricultural University

Tile Ripple Type Defect Identification and Detection System based on the YOLO v3 Object Detection Algorithm

Academic Advisor: Prof. Zhenbo Li   Apr. 2021~Present

➢   Aimed to develop an inspection system for detecting tile defects to obtain higher detection accuracy with less manpower investment.

➢   Completed the requirement analysis of the system and the design of each functional module, classifying the damaged ceramic tiles using deep learning methods, designing user interaction interfaces, and embedding the completed YOLO v3 algorithm into the website.

➢   Designed and implemented the front-end development of the system website using Python Flask, completed a literature review of research in areas related to object detection.

Classification for Dataset of Titanic Passengers

Academic Advisor: Assoc. Prof. Yunling Liu, Assoc. Prof. Qin Ma   Dec. 2021~Jan. 2022

➢   Aimed to apply machine learning methods to achieve the classification of the Titanic passenger dataset, predict the survival of different passengers, calculate their survival rates, and find the optimal method and parameters.

➢   Carried out the project based on Jupyter Notebook, completed data pre-processing, developed machine learning

algorithms using scikit-learn, and completed data visualization using matplotlib and seaborn libraries.

➢ Accomplished parameter tuning, model training, and model evaluation; and the results show that the Random Forest method achieved the best performance.

➢ The results indicated that the appropriate selection of model, feature mining and evaluating, and data processing (pre-processing, cleaning, and feature extraction) can better improve prediction accuracy.

Cache Performance Analysis System
Academic Advisor: Assoc. Prof.Qing Wang   Dec. 2021

➢ Aimed to gain an in-depth understanding of computer architecture, basic concepts of Cache, working principles, and factors influencing Cache performance, etc., designed and implemented a Cache simulator and conducted Cache performance analysis.

➢ Completed the system with C++ and realized the fundamental simulation function of Cache, which could support the personalized design of total capacity and block size, realized the visualization interface of the system to improve the user experience, etc.

Testing for E-commerce System
Academic Advisor: Lecturer Yaojun Wang   Nov. 2021

➢ Accomplished testing the CAU's mock shopping site (www.harvest-net.cn), whose business consists of browsing and purchasing items, paying for orders, receiving goods, leaving rates and feedback, etc.

➢ Implemented tests on links, forms, data validation, cookies, design language, database, and other specific functions (e.g., login and registration) to verify if the above-mentioned sections work correctly.

➢ Conducted functional tests based on the main contents of the website functional tests by using Apache JMeter, set specific functional evaluation indicators, and scored them separately in terms of comprehensiveness and effectiveness.

➢ Obtained the overall score (5.5) by summarizing the test results from the perspectives of functionality, ease of use, performance and security, analyzed them and proposed suggestions for website optimization and improvement.

Research of Teaching Planning Issues Based on Topological Sorting and Genetic Algorithm
Academic Advisor: Assoc. Prof. Qin Ma   Aug. 2021

➢ Aimed to organize and schedule the courses for each semester.

➢ Learned multiple algorithms for solving the topological ranking problem, implemented the average allocation of courses by semester in teaching planning problems, and employed genetic algorithms for course scheduling problems using Python's Numpy library.

➢ Derived the extended optimization model from the original model through continuous testing and program optimization.

Planning Model-based Supplier and Forwarder Selection Decisions for Manufacturing Companies
Academic Advisor: Assoc. Prof. Hui Zou   Sep. 2021

➢ Aimed to formulate the ordering and transshipment plan of raw materials in advance according to the production capacity.

➢ Utilized an improved TOPSIS method based on the entropy weight method to select the most important suppliers to guarantee the production of the company.

➢ Based on supplier availability and corporate ordering, developed 0-1 planning, linear planning, and multi-objective planning models by MATLAB and LINGO to solve the raw material ordering scheme and transshipment scheme of enterprises under different circumstances.

➢ Developed procurement and transshipment solutions by minimizing raw material ordering costs and minimizing transportation loss rates as the objective functions in the model.