Dong Siyan

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Summary

Physics undergraduate student (second year) with average score 91/100. Have excellent grades in many courses such as Electromagnetism, Theoretical Mechanics, Probability Statistics, Optics and a series of experimental courses. Self-study in-depth courses in atomic physics, quantum mechanics, etc. Have proficient machine learning knowledge and application skills. Have extensive leadership and experience several successful teamwork experiences.Have extensive laboratory experience.Passionate about the direction of cold atomic physics and other AMO experiments.

Education

BS **Sun Yat-Sen University**, Department of Physics and Astronomy, Major in Physics — Sept. 2022 to Present

- GPA: 3.9 / 4.0 Rank : 10 / 150
- CET-6 : 645

Research Experience

Optimization of the Arrangement of Cosmic Ray Detector Arrays, Project Leader — SYSU, Oct. 2023 to Present, 6 months

- Recognition and numerical integration of the waveforms of the detector's output electrical signals are realized, and particle type recognition is expected to be realized based on signal features by machine learning methods.
- Array placement and event information inference will be realized based on the simulation results of Geant4.(The expected duration of the project is one year)
- Real-time uploading of data using cloud services for unattended remote data collection.

Match Prediction Models Based on Multiple ML Methods, Project Leader — SYSU, Sept. 2023 to Feb. 2024, 6 months

- After exploratory data analysis, the prediction model was established based on stacking models and recursive algorithms .
- We employed various models, including Random Forest, as base models, and Logistic Regression as the meta-model to build the stacking model.
- We utilized GridsearchCV for hyperparameter optimization,and finally achieved an AUC = 0.8341 ,illustrating the accuracy of our model.

Exploring Soil Conductivity with Practical Applications, Research Assistant — SYSU, Jan. 2023 to Sept. 2023, 9 months

- Supervisor: Zhu Li, associate professor
- A thermometer with a temperature measurement range of 15-35°C and an accuracy of 0.02°C has been made with calcium chloride solution as the measuring medium, which can be used in place of a solid thermometer for temperature measurements carried out in liquid environments for specific needs.
- In this project, I was mainly responsible for the experimental design and related data processing content.

GRID, Research Assistant — SYSU, Nov.2022 to Oct. 2023, 1 year

- Supervisor: Lili Yang, associate professor.
- Gamma Ray Integrated Detectors, An undergraduate student satellite project.
- As my first lab project, I learned a lot about data processing, experimental design, PCB design, etc. I developed good experimental habits and rigorous style.

Additional Experience And Awards

China National Seholarship (Top 1%) 2022 - 2023

SYSU Outstanding student scholarship(Top 5%): First Prize, Sun Yat-Sen University, 2023

National Undergraduate Mathematical Contest in Modelling:
First Prize in Guangdong Province Division, China Society for Industrial and Applied Mathematics, 2023

National Undergraduate Mathematical Contest:
First Prize in Guangdong Province Division, Chinese Mathematical Society, 2022

APMCM Asia-Pacific Regional Student Mathematical Modeling Competition:
Third Prize, Organizing Committee of the Asia-Pacific Mathematical Modeling Contest for Undergraduates, 2022

President of the Student Council:
To exercise my organizational and communication skills, Oct.2023 to present

Technologies

Languages: C++, Python, Matlab, Mathematica, Labview, Latex

Software:
Proficient in using TensorFlow and MATLAB for building and training ML models to address practical challenges.
Specialized in particle physics experimental simulations using Geant4.
Proficient in using SPSS for data processing.