Ruihe (Rebecca)WANG

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EDUCATION BACKGROUND

Harbin Institute of Technology at Weihai (C9 League University) Weihai, China
Bachelor of Science (B.S.) Expected in June 2024

- **Major:** Information and Computing Sciences, Mathematics
- **GPA:** 92.25/100; **CET-4:** 650; **CET-6:** 659; **IELTS:** 8.0; **GRE:** 326+4.0
- **Core Courses:** Mathematical Analysis (97), Advanced Algebra (98), Real Analysis (94), Complex Analysis (98), Probability and Statistics (98), Numerical Analysis (99)

HONORS & AWARDS

The First Prize Scholarship **(*Top 3%*)** Nov.2022
Outstanding Student Model, Harbin Institute of Technology at Weihai **(*Top 2 students*)** Oct.2022
Special Prize in National English Competition for College Students Oct.2022
Lianyungang Excellent Student Scholarship Aug.2022
National Scholarship (*Top 1%*) Dec.2021

RESEARCH EXPERIENCES

Computer Vision Laboratory, The University of Hong Kong July.2023-Aug.2023
Advisor: Dr. Kenneth K.Y. Wong
Summer Research Internship Programme in the Department of Computer Science

- A Survey on 3D Human Avatar Modeling - From Reconstruction to Generation.

NTU Business AI Lab, Nanyang Technological University Jan.2023-Mar.2023
Advisor: Dr. Teoh Teik Toe
Artificial Intelligence Internship Programme

- Got an overall grade of "Distinction" (the highest grade among participants);
- Included research areas in computer science and Artificial Intelligence such as machine learning, deep learning, convolutional neural networks, and image processing by employing research tools such as Python, RStudio, Weka, Jupyter, Colab, and Anaconda;
- Compared convolutional neural networks based on ResNet50 and VGG16 for identifying Alzheimer's disease and trained the model on a dataset containing 6400 magnetic resonance images (MRI) in four categories so as to make fast classification judgments with high accuracy on the input images.

Department of Mathematics, Harbin Institute of Technology at Weihai Jun.2021-Aug.2022
Advisor: Prof. Wenxue Li, Dr. Huan Su, Dr. Pengfei Wang
Research on Stabilization of Dynamical System

- Proposed the novel asynchronously intermittent decentralized control for large-scale systems by designing an auxiliary timer for each subsystem to make a compromise between control work intervals and control rest intervals and using graph-theoretic technique and published a paper in 2022;
- Studied large-scale NCSs where the local networks operate asynchronously and independently in the

presence of sampling instants and DoS attacks by constructing time-dependent piece-wise Lyapunov functional that does not grow at DoS on/off transitions and published a paper in 2023.

PUBLICATIONS

- Quan Zhang, Ruihe Wang, and Pengfei Wang. "Decentralized control of large-scale systems under asynchronous denial-of-service." *IEEE Control Systems Letters* (2023).
- Pengfei Wang, Huan Su, and Ruihe Wang. "Asynchronously Intermittent Decentralized Control of Large-Scale Systems." *IEEE Control Systems Letters* (2022).

COMPETITION EXPERIENCES

China Undergraduate Mathematical Contest in Modeling (CUMCM) Sept.2022

Project: "Optimal Design of Maximum Output Power of Wave Power Generator"

Core Member

- National Second Prize (***Top 3%*** in 49,424 teams);
- Established the heave motion model of float and oscillator by multidisciplinary integration of mathematics, physics, and computer science;
- Carried out time domain analysis and frequency domain analysis to calculate the maximum power of the damper;
- Obtained optimization results employing differential equation model, numerical integration using composite Simpson's rule, Fourier transform, and genetic algorithm by Python.

Mathematical Contest in Modeling (MCM) Feb.2022

Project: "Optimal Control Method: The Secret to Better Cycling"

Team Leader

- Finalist (***Top 2%*** in 27,205 teams);
- Proposed a model for optimizing power distribution based on complex data processing and employed Green's theorem of using Lagrange Multipliers to give a theoretical solution to the model established;
- Used Python for the visualization of a heat map, a 5-dimensional radar map, and a box plot;
- Proved the strong universality of models by conducting numerical examples under the condition of windy weather, applying it to various cycling courses in real life, and promoting it to the team race containing six riders of different types.

WORK EXPERIENCE

Jinxiandai Information Industry Co., Ltd, Shandong, China Dec.2022

Intern/Full-time

- Completed a Java Web project to create a front end and back end of a news management system as well as a project report;
- Skilled use of Java, MySQL, HTML, CSS, JavaScript, etc., is required to finish the project.

SKILLS

Language: Mandarin (Native), English (Proficient), Cantonese (Conversational)

Computer Skills: Microsoft Suite, C, Python, Java, MATLAB, Mathematica, LaTeX