Yuhong Zhang

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Third-year Master's student, interested in the intersection between computer science and biology. Developing theories and methods in machine learning, algorithms, and optimization to solve computational problems in biology and healthcare. Seeking to begin a PhD program in Bioinformatics in Autumn 2025.

EDUCATION

9/2022-Present	**Master of Science in System Science**, Donghua University, Shanghai, China
GPA:	3.65/4, 92.4/100 (Average Score)
Research Focus:	Dynamics in Ordinary Differential Equations (ODEs) and Biological Mathematics
Research Methods:	Theoretical derivation using LaTeX; simulation of equations using MATLAB and Python
Key Modules:	Dynamical System Theory and Application, Nonlinear Time Series, Stochastic Process Theory, Numerical Analysis.
9/2018-6/2022	**Bachelor of Science in Statistics**, North University of China, Shanxi, China
GPA:	2.84/4, 87/100 (Average Score)
Research Methods:	Machine Learning with Python; Data Analysis with R and SPSS
Key Modules:	Mathematical Analysis, Probability Theory, Mathematical Statistics, Real Variable Functions, Applied Multivariate Statistical Analysis, Data Mining, Data Analysis and Machine Learning.

PUBLICATIONS

Published	**Zhang, Y.**, Song, Y., & Niu, L. (2023). “Globally attracting positive periodic solution of the n-dimensional periodic Ricker system.” *Applied Mathematics Letters*, 150, 108948. (SCI, JCR Q1) [PDF]
Under review	Xue, Z., **Zhang, Y.**, Zhang, L., & He, C. “Forecasting stock return based on multi-factor dynamic attention network.”

ACADEMIC EXPERIENCE

7/2023 – Present	**Postgraduate Project on Biological System**, Donghua University Employed mathematical methods to prove that all species in the biological Ricker system converge to a periodic global attractor under a specific condition Dynamically simulated the system using MATLAB and Python Published results in a peer-reviewed international journal
12/2022 – 12/2023	**Interdisciplinary Cooperation on Material Performance**, Donghua University Established and optimized a model combined ODE and Machine Learning to predict material performance Collaborated with three researchers from the Department of Materials Science and Engineering
9/2022 – 2/2023	**Undergraduate Teaching Assistant**, Donghua University Assisted in teaching Linear Algebra course for undergraduates

	Graded assignments, conducted review sessions, and supported student inquiries
7/2022 – 7/2023	**Graduate Creativity Program on Stock Prediction**, North University of China
	Developed a novel model, Multi-Factor Dynamic Attention Network, to forecast stock price exchanges
	Used attention weights between two dimensions to increase the prediction accuracy of LSTM by over 20%
	Manuscript submitted to a peer-reviewed international journal
10/2021 – 6/2022	**Undergraduate Thesis on Deep Learning**, North University of China
	Studied several deep learning models to optimize the control system of ventilator
	Used five-fold cross-validation to minimize overfitting
	Structured a GRU-LSTM combined model achieving a predictive accuracy of 96.1% with an MSE of 0.93, overcoming limitations in real-time monitoring to some extent
3/2021 – 3/2022	**Provincial Research Project on Healthcare**, North University of China
	Used a Python web scraping program to gather information from various websites and build a knowledge graph as a big database on dietary health
	Helped other team members make basic preparation for intelligent question-answering system construction

HONORS AND AWARDS

2023-2024	Second Class Scholarship for Elite Graduate Student, Donghua University
2022	**Honor of Outstanding Graduate,** North University of China
2021	**Meritorious Winner,** Interdisciplinary Contest in Modeling (ICM)
2021	**First Prize (Top 1%),** National Market Research and Data Analysis Contest
2021	Third Prize, National College Student Data Mining Contest
2021	Honourable mention, National College Student Statistical Modeling Contest
2020	**First Prize,** National College Student Data Analysis Challenge
2020	Second prize, National College Student Data Analysis Challenge
2018-2022	**First Class Scholarship for Elite Student,** North University of China

ACTIVITIES

2022	**Excellent Volunteer,** participated in organizing climate change awareness events and contributed to discussions on sustainable development strategies

SKILLS

Languages	English (fluent); Chinese (native)
IT Skills	Python (proficient in TensorFlow and PyTorch), MATLAB, R, SPSS, LaTex
Software	PyCharm, Jupyter, EndNote, Overleaf