

# Zixuan ZHANG

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**Location:** Chengdu, China

## EDUCATION

**Chengdu University of Technology, China** **09/2022 - 06/2025**

*Master's Degree in Management Science and Engineering*

- **Core Modules:** Big Data and Artificial Intelligence (90), Topics in Decision Research (89), Game Theory (90), Management Economic Analysis (89), Scientific and Technical English Reading and Writing (92), Machine Learning and Decision Analysis (89), Literature Review and Scientific and Technical Paper Writing (88), Frontiers of Modern Management Science (80), Nonparametric Analysis on Effi (95)
- **GPA:** 89.1/100

**Chengdu University of Traditional Chinese Medicine, China** **09/2018 - 06/2022**

*Bachelor's Degree in Medical Information Engineering*

- **Core Modules:** C Language Programming (83), Advanced Mathematics (88), Database System Design and Programming (85), JAVA Language Programming (83), Engineering Linear Algebra (87.8), Python Language Programming (91.6), Network Technology and Maintenance (90), Fundamentals of Information Management (88.2), Medical Data Analysis and Mining (91.2)
- **GPA:** 3.3/4.0

## PAPERS & PUBLICATIONS

- [1]. **Zhang, Z.**, Li, Y., Feng, X., Shen, Z. (2024, Submitted). Evaluation of Capacity Utilization for High Quality Agricultural Development in the Yellow River Basin - Based on the Non-point Source Pollution and Carbon Emission. *Technological Forecasting and Social Change*.
- [2]. Li, Y., **Zhang, Z.**, Zhang, Q., Feng, X., & Chen, X. (2024, Submitted). Research on Optimized Allocation of Wastewater Emission Permits Based on the "Three Waters"- a case of the Yellow River Basin in China. *Journal of Environmental Management*.
- [3]. **Zhang, Z.**, Li, Y., Lv, Y., Feng, X., & Chen, X. (2024, Under Review). Comprehensive Evaluation of "Three Waters" Carrying Capacity and Path Evolution Study: A Case of the Yellow River Basin. *Science of The Total Environment*.
- [4]. Yang, S., **Zhang Z.**, Yu, K., Li, Z. (2023, Under Revision) Analysis on the coupling coordination characteristics and key factors between high-quality economic development and water resource carrying capacity for cities in the Yangtze River Basin. *Sustainable Cities and Society*.
- [5]. Li, Y., Lv, Y., **Zhang, Z.**, Feng, X., & Chen, X. (2024). Coupling coordination evaluation of "Three Waters" system and impulse response analysis in the Yellow River Basin. *Sustainable Cities and Society*, 102, 105174. <https://doi.org/10.1016/j.scs.2024.105174>
- [6]. Lv, Y., Li, Y., **Zhang, Z.**, Luo, S., Feng, X., & Chen, X. (2024). Spatio-temporal evolution pattern and obstacle factors of water-energy-food nexus coupling coordination in the Yangtze river economic belt. *Journal of Cleaner Production*, 141229. <https://doi.org/10.1016/j.jclepro.2024.141229>
- [7]. Yuan, M., Chen, X., Li, Y., **Zhang, Z.**, & Wang, L. (2023). Collaborative optimal allocation of water resources and sewage discharge rights in watershed cities: considering equity among water sectors. *Environmental Science and Pollution Research*, 30(38), 88949-88967. <https://doi.org/10.1007/s11356-023-28664-w>

## ACADEMIC PROJECTS

**Research on Key Issues and Paths for Systemic Transformation in Sichuan Province under the Dual Carbon Goal** **01/2024 - 12/2025**

- **Core Member; Supervisor:** Xudong Chen, Vice President of the College of Management Science
- **Key Contributions:** (1) Collected and organised data from 2018 to 2022, including population, economic,

and eight types of energy consumption data in Sichuan Province. (2) Utilised the IPCC carbon emission calculation method to quantify carbon emissions in Sichuan Province from 2018 to 2022. (3) Developed a carbon emission driving factor decomposition model and applied the Logarithmic Mean Divisia Index (LMDI) method to analyse the contribution and trends of various factors to carbon emissions. (4) Drafted Chapter Four of the project proposal, involving tasks such as table generation, data analysis, and technical roadmap creation.

- **Achievements:** Completed a project proposal and secured funding from the Sichuan Provincial Natural Science Foundation (Project funding: RMB200,000).

### **Study of the Allocation Strategy of Water Pollutant Emission Permits in Tuojiang River Basin by Coordinating Water Resources, Water Environment and Water Ecological Management**

**06/2023 - 12/2024**

- **Core Member; Supervisor:** Xue Feng, Deputy Sector Chief of the College of Management Science
- **Key Contributions:** (1) Conducted literature review on three waters nexus, ecological compensation, and pollutant emission permits. (2) Collected and cleaned data for 17 years from six major cities in the Tuojiang River Basin. (3) Proposed integrating bidirectional ecological compensation mechanism with water pollutant emission permits allocation model. (4) Assisted in drafting the research results section and project report.
- **Achievements:** Published a paper (co-author) - Feng, X., Li, Y., Chen, X., Lv, Y., **Zhang, Z.**, & Chen, S. (2023). Study of the allocation strategy of water pollutant emission permits under a bidirectional ecological compensation mechanism. *Ecological Indicators*, 154, 110849.

### **Research of the Allocation Strategy of Water Pollutant Emission Permits Considering Ecological Compensation Mechanism Driven by Big Data - Taking Tuojiang River Basin as an Example**

**11/2022 - 12/2024**

- **Core Member; Supervisor:** Xudong Chen, Vice President of the College of Management Science
- **Key Contributions:** (1) Conducted literature review on big data analytics, ecological compensation, and pollutant emission permits, outlining the research framework and drawing a technical roadmap. (2) Assisted in developing a data-driven optimisation scheme for pollutant emission permits, designing a non-dominated sorting genetic algorithm based on data analysis, and creating algorithm flowcharts. (3) Contributed to the writing of the research report, including the use of ArcGIS and Origin software for data analysis visualisation, table creation, and writing the conclusion section of the paper.
- **Achievements:** Published a paper (co-author) - Li, Y., Chen, X., Feng, X., Lv, Y., **Zhang, Z.**, & Qi, Q. (2023). Investigation of the allocation and trading strategy of wastewater emission permits considering ecological compensation. *Environmental Technology & Innovation*, 30, 103103.

### **Chronic Gastritis AI Data Mining and Processing**

**03/2021 - 06/2021**

- **Team Leader; Supervisor:** Chuanbiao Wen, Vice President of the College of Medical Information Engineering
- **Key Contributions:** (1) Conducted literature review on chronic gastritis pathology and AI data analysis, identifying research gaps. (2) Collected and anonymised data from 210 chronic gastritis cases. (3) Utilised SPSS for statistical data analysis and Origin for data visualisation. (4) Coordinated team tasks, supervised team members, and conducted weekly work progress presentations.
- **Achievements:** (1) Co-authored a project proposal. (2) Awarded the National-level First Prize in the 14th China Collegiate Computing Design Competition.

## **HONOURS & AWARDS**

### **Competitions and Awards**

- Excellent Award in China National Undergraduate “Innovation, Creativity and Entrepreneurship” Challenge **06/2021 - 10/2021**
- National-level First Prize (Top 5%) in the 14th Chinese Collegiate Computing Competition (Team Leader) **05/2021 - 08/2021**
- Provincial-level Second Prize (Top 20%) in the 14th Chinese Collegiate Computing Competition (Team Leader) **03/2021 - 05/2021**

## Honours

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|---|---------|
| • Third-Class Graduate Academic Scholarship | 09/2023 |
| • Technological Innovation Scholarship      | 09/2021 |
| • Second-Class College Academic Scholarship | 05/2021 |
| • Third-Class College Academic Scholarship  | 12/2020 |
| • Third-Class College Academic Scholarship  | 06/2020 |
| • Second-Class College Academic Scholarship | 09/2019 |

## ADDITIONAL INFORMATION

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- **Skills:** GIS, MATLAB, Python, Stata, EViews, Maple, Origin, SPSS, Microsoft Office
- **Language:** Mandarin (Native), English (Proficient)