

# Zhuoyong Shi

Location: Shaanxi, China; Birthday: February 16, 2001;

Tel: +8617899198361; Homepage: <https://zyshi007.github.io>; E-mail: [shizy@mail.nwpu.edu.cn](mailto:shizy@mail.nwpu.edu.cn)

## EDUCATION

<b>Northwestern Polytechnical University</b>	Sep. 2022 – Present
<b>Major&amp; GPA&amp; RANK:</b> Electronic Science and Technology (MPhil)	3.82 1/54
<b>Scholarship:</b> National Scholarship for Graduate Students	
<b>Dissertation:</b> Simulation of Air Surface Confrontation Strategy Based on “System Cluster”	
<b>Core Modules:</b> Large System Theory and Applications, Matrix Theory, Numerical Analysis, Cooperative Control and Optimisation of Unmanned Systems, Data Fusion Methods and System Architecture Design, C4I System Principles and Analysis, Avionics Integrated Systems, Aviation System Simulation Testing and Analysis.	
<b>Xian Jiaotong University City College</b>	Sep. 2018 – Jun. 2022
<b>Major&amp; GPA&amp; RANK:</b> Electronic Information (Bachelor)	3.31 3/108
<b>Scholarship:</b> Scholarship from the School of Electronic Information (twice)	
<b>Dissertation:</b> Design of quadcopter UAV trajectory prediction system based on neural network (Outstanding Graduation Thesis)	
<b>Core Modules:</b> Advanced Mathematics (100), Probability Theory and Mathematical Statistics (94), Signals and Systems (96), Digital Electronic Technology (96), Circuit Fundamentals (93), Communication Electronic Circuits (97), C Language Programming (92), Linear Algebra (91), Digital System Design (91), College Physics Experiments (excellent), Electronic System Design Training (excellent), MATLAB Programming and Applications (excellent), Digital Electronic Technology Experiments (excellent)	

## RESEARCH INTEREST

Deep Learning, Intelligent Agent Collaborative Control, Reinforcement Learning, Signal Processing, Mathematical Modeling

## PUBLICATIONS

- [1] Jiandong Zhang, **Zhuoyong Shi\***, et al. UAV Trajectory Prediction Based on Flight State Recognition [J], IEEE Transactions on Aerospace and Electronic Systems.  
DOI: 10.1109/TAES.2023.3303854
- [2] **Zhuoyong Shi\***, et al. Design of motion pattern recognition system based on artificial intelligence methods [C], 2023 IEEE International Conference on Cyber-physical Social Intelligence. (accepted)
- [3] **Zhuoyong Shi\***, et al. Autonomous Security Evaluation Model for UAV Based on Airborne Information [C], 2023 IEEE International Conference on Information Communacation and Signal Processing. (accepted)
- [4] Anli Zhang, **Zhuoyong Shi**, et al. Design of Wireless Motion Sensor Node Monitoring System Based on LabVIEW [J], Foreign Electronic Measurement Technology.  
DOI: 10.19652/j.cnki.femt.2103232
- [5] Anli Zhang, Meng Xie, **Zhuoyong Shi**, et al. Design of Intelligent Elevator Control System Based on Space Occupancy Determination [J], Application of Electronic Technique.  
DOI: 10.16157/j.issn.0258-7998.201037
- [6] Anli Zhang, **Zhuoyong Shi**, et al. An Evaluation Method for Aircraft Atmospheric Data Security Monitoring System [P], Invention Patent in China. (Authorised)

Patent Number: CN116662937A

[7] Meng Xie, Ze Hui, Anli Zhang, **Zhuoyong Shi**. Design of Intelligent WiFi Car Control System Based on LabVIEW [J]. Automation & Instrumentation.

DOI: 10.19557/j.cnki.1001-9944.2020.12.005

### **PREPRINT**

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[1] **Zhuoyong Shi\***, et al. Design of Recognition and Evaluation System for Table Tennis Players' Motor Skills Based on Artificial Intelligence [J]. IEEE Transactions on Instrumentation and Measurement. (Peer Review)

[2] **Zhuoyong Shi\***, et al. UAV flight states recognition and trajectory prediction based on trajectory feature construction [J], IEEE Transactions on Signal Processing. (Peer Review)

[3] Anli Zhang, **Zhuoyong Shi\***, et al. Recognition and Evaluation of Table Tennis Movement Skills Based on Feature Construction [J], Chinese Journal of Sensors and Actuators. (Peer Review)

[4] Anli Zhang, **Zhuoyong Shi\***, et al. Design of UAV Safety Monitoring System Based on LABVIEW [J], Chinese Journal of Sensors and Actuators. (Peer Review)

[5] Anli Zhang, **Zhuoyong Shi\***, Yafei Song. An Intelligent Decision System for Airport Taxi Based on LabVIEW [J], Chinese Journal of Engineering Mathematics. (Peer Review)

[6] Anli Zhang, **Zhuoyong Shi**, et al. An autonomous flying UAV trajectory prediction method [P], Invention Patent in China.

[7] Anli Zhang, **Zhuoyong Shi**, et al. A pattern recognition method for wearable device-specific sports [P], Invention Patent in China.

### **SCIENTIFIC COMPETITIONS**

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“Electrical Cup” China Undergraduate Mathematical Contest in Modeling National <b>Top Prize</b> , Team Award ( <b>team leader</b> )	2021.8
The National Undergraduate Mathematics Competitions National <b>First Prize</b> , Individual Award ( <b>twice</b> )	2021.11&2020.11
Interdisciplinary Contest In Modeling(ICM) Honorable Mention, Team Award ( <b>team leader</b> )	2021.5
National Student Statistical Analysis of Data Competition National Second Prize, Team Award ( <b>team leader</b> )	2023.7
China Undergraduate Mathematical Contest in Modeling(CUMCM) Shaanxi Province First Prize, Team Award ( <b>team leader</b> )	2019.9
National Graduate Student Electronic Design Competition Northwestern Regional First Prize, Team Award	2023.7
Shaanxi Higher Mathematics Competition for College Students Shaanxi Province First Prize, Individual Award	2019.10

### **PROJECT EXPERIENCE**

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<b>The Key R&amp;D Projects in Shaanxi Province (No. 2022GY-089)</b> <ul style="list-style-type: none"><li>Acting as a student leader in the project and published one paper</li></ul>	Sep. 2022 – Present
<b>The Natural Science Basic Research Program of Shaanxi (No. 2022JQ-593)</b> <ul style="list-style-type: none"><li>Participated in the project and published one paper</li></ul>	Jun. 2022 – Present
<b>The Shaanxi Provincial Sports Scientific Research Project (No. 2021382)</b> <ul style="list-style-type: none"><li>Acting as a student leader in the project and published one paper</li></ul>	Sep. 2021 – Sep. 2022
<b>Intelligent Elevator System Design (Innovation and Entrepreneurship Project)</b> <ul style="list-style-type: none"><li>Led the project and published a paper with the mentor</li></ul>	Jan. 2021 – Sep. 2021

- Led the projects to participate in Maker China and Innovation Competition respectively

## **CAMPUS EXPERIENCE**

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### **Academic Expeditions:**

- 2023 Future AI Masters and Global IT Training Camp(Achieved first place in course grades)
- Northwest University of Technology Summer Camp(Excellent Camper)

### **Skills Certificate:**

- Artificial Intelligence Development Certification from Huawei
- Big Data Analysis Technology Certification from the Ministry of Industry and Information Technology in China
- Mathematical Modeling Skills Certification from the Ministry of Industry and Information Technology in China
- Computer Technology and Software Professional Technical Qualification Certification from the Ministry of Industry and Information Technology in China

### **Passion for Sports:**

After class, I enjoy the joy of sports and enjoy sports such as table tennis, long-distance running, badminton, etc. Won twice male singles championships in table tennis during college; During my graduate studies, I won a runner up in table tennis men's singles and a championship in men's doubles, and finished in the 2023 Shaanxi University Marathon.

## **SKILLS AND SELF-EVALUATION**

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### **Strong Programming Skills:**

- Proficient in mainstream programming languages such as MATLAB and Python
- Participated in writing the textbook “*MATLAB Programming and Application*” ISBN:9787121449376
- Served as a teaching assistant in “*MATLAB programming and application*” courses
- Achieved the highest performance in the 2023 AI summer camp based on the Python programming

### **Abundant Experience in Machine Learning and AI:**

- Achieved the highest performance in the 2023 AI summer camp
- Published papers in machine learning
- Participant several Scientific Research Program in Shannxi
- Implementation of a machine vision-based hazardous materials sorting project using yolov5 in the postgraduate electronic design competition

### **Good at Mathematic:**

- Participated the First prize in National Undergraduate Mathematics Competitions in 2020&2021
- Participated several mathematical modelling competitions and achieved excellent results, including the national first prize.
- Achieved distinction in all mathematics courses.

### **Good English Ability for Reading and Speaking:**

- Participated in two conferences and made oral presentations
- Read hundreds of original papers in the field
- Reviewed more than 40 manuscripts in the field as a reviewer

### **Strong Ability in Teamwork, and Strong Ability in Execution and Planning:**

- To serve as team leader, led teams in more than ten competitions
- To serve as student leader, implementation of scientific research projects