Zhou Wen

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Xianlin Campus, Nanjing University of Finance and Economics, Qixia District, Nanjing, Jiangsu Province, China

Education

Nanjing University of Finance and Economics (NUFE), Nanjing, China   09/2020 - 07/2024

Bachelor of Engineering (B.E.) in Software Engineering

- **Grade:** 77.2982/100
- **Grants & Scholarships:**
  - ✧ *National Scholarship 04/2021 – 02/2022, CNY 2,200*
  - ✧ *National Scholarship 04/2022 – 04/2023, CNY 3,300*
  - ✧ *Jiangsu Provincial National Innovation Project Project No. 202210327003Z: "Fast Detection & Implementation of Small Targets in Computer Vision", Grant Amount: CNY 4,000*

Professional Experience

Research on Elementary Geometry Learning Application based on Machine Proving and Metaverse   03/2021 - 03/2024

Founder and Social Practitioner

- Integrated advanced mathematics with intelligent applications and foundational geometric mathematics.
- Designed a virtual machine program to assist high school students in engagingly learning geometry.
- Software included a virtual robot for interactive theorem proofs visualization.
- Addressed a significant gap in the educational landscape, offering an easier way to learn geometry.

Huawei HSD Campus Developer Ambassador   12/2022 - 12/2023

Campus Ambassador

- Propagated, learned, and organized study sessions around Huawei's technologies.
- Guided students in understanding and working with Huawei's HarmonyOS ecosystem.

Nanjing Shunfa Software Technology Co., Ltd   07/2022 - 09/2022

Software Engineer Intern

- Responsible for software product development, innovative product exploration, and interface design documentation.
- Developed and launched a medical-integrated intelligent software product.
- Initial market value evaluation of 20 million RMB.
- Completed server-side, management-side, and user-side interfaces.

Tianjin Zhisheng Technology Co., Ltd   07/2023 - 07/2024

Director of Research and Development

- Oversaw product R&D, product refinement, and innovation.
- Participated in the "Jin Yinhua Harvesting Robot" product research.
- Robot secured 6 million RMB in funding.
- Authored academic papers in SCI and EI indexed journals.
- Gold award in an innovation and entrepreneurship competition using an intelligent education project.

Research Experience

Quick Detection and Implementation of Small Targets in Computer Vision   07/2022 - 03/2023

Technical leader, core member, overall project leader

- Project Number: 202210327003Z
- Advisor: Zhao Qinghua
- Focused on small target detection, a pain point in computer vision.
- Proposed four improvements and integrated them into a common framework (CEG-Distillation) based on YOLOv5s.
- Two academic papers (English journal and another one aimed at top-tier publications).
- A software copyright.

Research on Adversarial Machine Learning in Face Recognition Technology   07/2022 - 03/ 2023

Project leader and technical advisor

- Addressed challenges in face recognition systems from adversarial attacks.
- Developed adversarial training methods for robustness against adversarial samples.
- Published an EI-indexed paper on obstacle detection based on Grey Wolf Detection Algorithm.

Fine-grained Image Classification and Feature Recognition in Human Eye Disease Automatic Analysis and Diagnosis 06/ 2023 - 03/ 2024

Project lead and technical advisor

- Leveraged computer vision technology for early detection and diagnosis of eye diseases.
- Obtained two software copyrights.
- An expected publication in a SCI journal.

Anchor-Free Pneumonia Image Detection Algorithm Based on Up-Down Dual-Level Feature Pyramid Fusion 03/ 2023 - 03/ 2024

Team member

- Developed an algorithm for automatic pneumonia lesion detection using a dual-level feature pyramid structure.
- Expected publication in a Q3 SCI medical image detection journal.

Pathological Mechanism Study and Automatic Diagnostic Analysis of Alzheimer's Disease based on Feature Search and Ensemble Deep Learning   03/ 2023 - 03/ 2024

Project leader and initiator

- Addressed Alzheimer's Disease, a significant neurodegenerative disorder, through AI-powered research.

- Expected publication in a Q2 SCI medical data mining journal.
- Bronze award in the second "Chuang Yi Cup" National College Student Innovation and Entrepreneurship Competition.

Research on Elementary Geometry Learning Application Based on Machine Proving and Metaverse 03/ 2021 - 03/ 2024
Project initiator and leader
- Advisors: Qian Gang, Zhao Qinghua
- Merged advanced math with intelligent applications and foundational geometric math.
- Established a program to vividly illustrate multiple shapes, enhancing learning experience.
- Expected publication in a Q2 SCI AI journal.
- Developed a commercial app.
- Silver award in the "Internet+ Innovation and Entrepreneurship" competition for two consecutive years.

Lightweight Semantic Segmentation Algorithm for Emotion AI Classification Based on Educational Brain-Computer Interface Detection 07/2022 - 03/ 2023
Project leader
- Advisors: Fan Yusheng, Wang Jianqing
- Merged educational brain-computer interface technology with lightweight semantic segmentation for emotion detection.
- Published in TIM (IEEE Transactions on Instrumentation and Measurement), a Q2 SCI journal.

<u>Academic Publications</u>
Summary:
- Total number of papers: 20
- Independently conceived topics and conducted data collection for all publications.
- Published in official journals: 13
- Currently not yet published: 4
- Received acceptance notifications: 13
- Indexed papers: 6
- SCI journals: 9
- EI-indexed & General English journals: 10
- First author: 15
- Corresponding author: 5

Indexed Papers:
- **Zhou W,** Gou Y, Chen L, et al. **Analysis of small target detection algorithm based on SSD and YOLOv5**[J]. Academic Journal of Computing & Information Science, 6(6): 73-79.
- Jiang M, Zhou W, Gou Y. Fault prediction of industrial machinery and equipment[J]. International Journal of Frontiers in Engineering Technology, 2023, 5(3).
- **Zhou W**, Yang J, Meng H, et al**. Research on image classification mechanism based on self-supervised learning**[C]//Third International Conference on Machine Learning and Computer Application (ICMLCA 2022). SPIE, 2023, 12636: 91-95.
- Wu Y, Li **Z**, Wang J, et al. **Application study on the recognition of oral obstructed tooth images using semantic segmentation**[C]//Second International Conference on Biomedical and Intelligent Systems (IC-BIS 2023). SPIE, 2023, 12724: 610-614.
- **Zhou W**, Meng H, Huang A, et al. **Research on obstacle recognition technology based on optimized deep learning algorithm**[C]//International Conference on Cloud Computing, Performance Computing, and Deep Learning (CCPCDL 2023). SPIE, 2023, 12712: 334-341.
- **Zhou W**, Meng H, Shi Y, et al**. Program completeness verification mechanism based on static analysis**[C]//International Conference on Computer Network Security and Software Engineering (CNSSE 2023). SPIE, 2023, 12714: 65-69.

Published but Not Indexed:
- **MDET** - A GAN-based target detection algorithm. Submitted for indexing at AIHIC (China Computing Conference).
- **Emotion Artificial Intelligence Classification Lightweight Semantic Segmentation Algorithm Based on Educational Brain-Computer Interface Detection** - Accepted by TIM (IEEE Transactions on Instrumentation and Measurement, Q4 Journal).
- **KDSMALL** - A knowledge distillation-based small target detection algorithm. Currently under review by Computer Communities. Accepted by CVIU.
- **HMT** - An EEG signal classification method based on CNN architecture. IEEEXPlore, Expected in May 2023.
- **Application Study on the Recognition of Oral Obstructed Tooth Images Using Semantic Segmentation** - IEEEXPlore, Expected in May 2023.
- **Deep Learning Model for Automatic Analysis and Diagnosis of Dental Caries in Oral Panoramic Images** - IEEEXPlore, Expected in May 2023.
- **Deep Learning Model for EEG Signal Processing** - IEEEXPlore, Expected in May 2023.

Unpublished Papers (All Expected in SCI Journals):
- **Application Study of Elementary Geometry Learning Based on Machine Proofing and 3D Graphics Technology** - Expected in Computers & Graphics, November 2023.
- **Deep Learning-based Multifaceted Study Algorithm for New York English Vocabulary Games** - Expected in Knowledge-Based Systems, October 2023.
- **Heuristic Feature Search and Ensemble Deep Learning-based Universal Disease Automatic Diagnosis Analysis and Pathological Mechanism Research Algorithm** - Expected in Journal of Alzheimer's Disease, October 2023.
- **Pneumonia Detection Algorithm Based on Top-Down Feature Pyramid and Knowledge Distillation** - Expected in Progress in Photovoltaics: Research and Applications, October 2023.

- **Video Emotion Recognition Algorithm Based on Heuristic Feature Identification Combined with Context** - Expected in Pattern Recognition, December 2023.
- **Review of Artificial Intelligence Applications in Network Security Detection** - Expected in Computers & Electrical Engineering, January 2024.
- **Heuristic Feature Recognition and Graph Neural Network-based Network Attack Mechanism Research** - Expected in Pattern Recognition, March 2024.

Awards and Honors
National Level:
- **Interviewed** jointly by Huawei & China News Weekly, also featured by Sina, Phoenix, Zhongguancun ZOL, China News Weekly, and Huawei.
- **Led** the National Innovative Project for College Students in Jiangsu **Province & Excellent Conclusion** (As the technical backbone and general person in charge of the project, project number: 202210327003Z "Rapid Detection and Implementation of Small Targets in Computer Vision") – China College Student Innovation Training Center, August 2022 - June 2023.
- **Led** the Provincial Innovative Project for College Students in Jiangsu Province - As the project leader and technical instructor on "Adversarial Machine Learning in Facial Recognition Technology" (Project Number: 202210327082Y), August 2022 - June 2023.
- **Led** the Provincial Innovative Project for College Students in Jiangsu Province - As the project leader and technical instructor on "Fine-grained Image Classification and Feature Recognition-Based Study on Automated Analysis and Diagnosis of Human Eye Diseases" (Project Number: 202310327123Y), China College Student Innovation Training Center, August 2023 - June 2024.
- "Fourteenth Five-Year" National Planning Subject & **First Prize** in Science and Technology for the "Countermeasure Analysis of Applying AI Technology to Computer Game Software" - Ministry of Science and Technology of China, March 2023.
- Winner of the International **Second Prize (Team Leader)** in the Winter Mathematical Modeling Competition of the Dimensional Cup 2022 - Inner Mongolia Dimensional Cup Organizing Committee, December 2022.
- KAGGLE RSNA 2023 Abdominal Trauma Detection - **Silver Award**, October 2023.
- Algorithm Design and Programming Challenge Winter Competition - **Gold Award,** October 2023.
- MOTHERCPU Mathematical Modeling Competition - **First Prize**, September 2023.
- China Service Outsourcing Innovation and Entrepreneurship Competition Eastern Division - **Third Prize (Team Leader)**, April 2023.
- United Nations Procurement Cup National College Student English Vocabulary Competition - **First Prize** in Undergraduate Group, February 2023.
- Second "Innovation Cup" National College Student Innovation and Entrepreneurship Competition - **Gold Award**, July 2023.
- IEERA International University English Vocabulary Challenge - **Second Prize** in China Division, March 2023.
- Ninth Economic Development Cup College Student Innovation and Entrepreneurship Competition Higher Education Group - **Second Prize** in Provincial Competition, May 2023.
- Innovation Practice Cup National College Student English Vocabulary Competition **- First Prize**, January 2023.
- Third Jingzhou Mail Cup "Chu Chuanghui" College Student Innovation and Entrepreneurship Competition - **Excellence Award**, Jingzhou Mail Cup Organizing Committee, 2023.
- Zhengjiang Innovation and Entrepreneurship Competition **Finals 2**023, September 2023.
- Asia-Pacific Mathematical Modeling Competition 2022 - **International Third Prize (Team Leader)**, December 2022.
- Asia-Pacific Mathematical Modeling Competition 2023 - **International First Prize (Team Leader)**, October 2023.
- China Internet Plus Innovation and Entrepreneurship Competition National Finals 2023 for the project "Guan Qing Smart Car - **Leader in Central Air Conditioning Duct Cleaning**", October 2023.
- China Internet Plus Innovation and Entrepreneurship Competition National Finals 2023 for the project "Ke Drop - **Smart Neural Hypotension Pioneer**", October 2023.
- Huawei HDC 2023 **Campus Ambassador**, December 2022 - October 2023.
- **CCF Special Campus Ambassado**r, December 2022 - December 2023.
- **Distinguished Algorithm Engineer a**t Tianjin Zhi Life Technology Co., Ltd., July 2023 - July 2024.

University Level:
- Hexagon Cup at China Jiliang University 2023 Internet+ College Student Innovation and Entrepreneurship Competition - **Special Award**, September 2023.
- **Excellent Summer Research Report** at Nanjing University of Finance and Economics, Information Engineering "Research on Elementary Geometry Intelligent Learning Platform Based on Machine Proving", 2022.
- **Bronze Award** at Nanjing University of Finance and Economics Challenge Cup, 2021.
- **Silver Award** at Nanjing University of Finance and Economics Internet+ College Student Innovation and Entrepreneurship Competition, 2022 and 2023.
- **Third Prize** in Nanjing University of Finance and Economics Innovation Competition, 2023.
- **Second Prize** in Nanjing University of Finance and Economics Challenge Cup, Red Tour Track, 2023.

Faculty Level:
- **Excellent Teaching Assistant for C Language**, September - December 2022 at the School of Information Engineering, Nanjing University of Finance and Economics.
- **Excellent Teaching Assistant for JAVA Language, March** - May 2023 at the School of Information Engineering, Nanjing University of Finance and Economics.

- **Distinguished Participant in SRTP**-2021, June 2023 at the School of Information Engineering, Nanjing University of Finance and Economics.

Patents:

- **Computer Software Copyright for Integrated Firewall Control System,** December 2022.
- **Computer Software Copyright for University Student Professional Planning System**, October 2023.
- **Computer Software Copyright for Geometry Mathematical Education Platform**, October 2023.
- **Computer Software Copyright for Intelligent Rescue Command System**, October 2023.
- **Computer Software Copyright for Intelligent Medical Q&A System**, October 2023.
- **Invention Patent for Oral Intelligent Recognition Device**, May 2023.

Additional Info

Certifications:

- Obtained the Intermediate Written Translation Certificate in National Business Foreign Language Translation.
- Skills in Patent Writing: Experienced in drafting and finalizing patents.

Technical Proficiencies:

- Skilled in a range of programming languages and techniques including C, JAVA, MATLAB, algorithm design, small target detection, software engineering, Python, C++, and software design and development.

Research and Development:

- Proficient in identifying and delving into research projects, and developing innovative projects from the ground up.

Passion:

- A Geek full of passion for computer science and technology.