Hao Wei Xue

MASTER · DIGITAL HUMAN ALGORITHM ENGINEER

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"My dream is creating powerful and intelligent human-centered HCI system!"

Education

Northwest A&F University,College of Information Engineering   *Xianyang, Shaanxi*

BACHELOR OF COMPUTER SCIENCE AND TECHNOLOGY   *Sep. 2019 - Jun. 2023*

- GPA : 3.46 / 4.00
- Major courses : Advanced Mathematics (98), Linear Algebra (100), Probability Theory and Mathematical Statistics (97), Discrete Mathematics (97), Frontiers of Computer Science and Technology Development (97), Matrix Theory (97).

National University of Singapore,School of Computing   *Singapore*

SUMMER PROGRAMME OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING (COMPUTER VISION)   *Jul. 2024 - Aug. 2024*

- Overall Grade : Distinction
- A distinction : This is a special award for outstanding performance and an encouragement to others.

Northwest A&F University,College of Information Engineering   *Xianyang, Shaanxi*

MASTER OF COMPUTER SCIENCE AND TECHNOLOGY   *Sep. 2023 -*

- GPA : 3.80 / 4.00
- Research interest : Computer vision, Human-computer interaction, 3D hand reconstruction

Publications

LGNet: Local-and-Global Feature Adaptive Network for 3D Interacting Hand Mesh Recovery   *Xianyang, Shaanxi*

FIRST AUTHOR   *May. 2024*

- In the process of submitting a manuscript
- To address the ambiguity, self-obscuration and self-similarity issues caused by existing Transformer-based methods in learning the interaction between two hands, local and global feature adaptive networks are proposed to effectively model the spatial dependency between two hands by decoupling the hand mesh reconstruction task into three stages.

Hand reconstruction incorporating biomechanical constraints and multi-modal data   *Xianyang, Shaanxi*

FIRST AUTHOR   *Sep. 2023*

- Journal of Graphics
- Peking University core
- To address the issues of high cost and slow response speed of current monocular hand reconstruction devices, a method is proposed to obtain hand shape and posture for 3D hand reconstruction using a monocular camera.

Gesture Recognition Algorithm Introducing Ghost Feature Mapping and Channel Attention Mechanism   *Xianyang, Shaanxi*

SECOND AUTHOR   *Jan. 2023*

- Journal of Computer-Aided Design & Computer Graphics
- EI,Peking University core
- To address the issues of insufficient feature extraction capability of lightweight target detection network for static gestures and high error and leakage detection rates, a lightweight gesture recognition algorithm is proposed based on the YOLOv4-tiny network structure.

Experience

Shaanxi Provincial Student Innovation Training Program (S202110712285)   *Xianyang, Shaanxi*

PROJECT LEADER   *May. 2021 - May. 2022*

- Research and development of intelligent media interactive applications based on Mediapipe framework and augmented reality technology.
- Mathematical modeling : Optimize the gesture recognition algorithm and use the Mediapipe framework to build a 3D skeleton gesture recognition model, which improves the prediction accuracy by 5%.
- Software Design : Leading the development and design of software, designing and developing an intelligent media interaction APP based on gesture recognition technology that instantly generates 2D/3D interactive special effects and recognizes 23 common gestures.
- Material writing : Writing project application form, conclusion letter, paper submission, and soft copy application form, totaling more than 20,000 words.
- Project achievements: Excellent mid-term inspection results of provincial-level innovation projects, one EI paper, and two software copyrights.

Internship at Jiangsu Yuan Shang Yuan Intelligent Technology Co. *Changzhou,Jiangsu*

Northwest A&F University School-Enterprise Joint Practical Training Project *Jun. 2022 - Aug. 2022*

- Image description software based on gesture recognition.
- Project Introduction: Screenshots can be taken within the scope of the camera through voice, and text descriptions and text descriptions of the screenshot images can be generated for Chinese voice broadcast. The combination of "speech recognition + image description image" is more powerful than traditional description and can be used in areas such as life assistance for the deaf and aphasic, cross-language communication, etc. It can fully expand the application field of image description technology in a more immersive interactive form. Give full play to the powerful role of image description technology.

JavaEE Enterprise-Level Development Training *Xianyang, Shaanxi*

Northwest A&F University School-Enterprise Joint Practical Training Project *Jun. 2021 - Aug. 2021*

- Community Smart Property Management System.
- Project background: With the continuous improvement of science and technology, this traditional manual management method will inevitably be replaced by accounting-based information management methods. Smart property is an inevitable trend in the development of the property industry in the future.
- Main work: This system adopts B/S architecture, Java, Html, Css, Js and other technologies, and uses the mainstream back-end development framework SpringBoot (SpringMVC+Spring+Mybatis). The front-end development framework uses LayUI, Vue, JQuery and Vue. The front-end component library Element-UI is developed using the open source lightweight database Mysql.
- Project achievements: Realized the main functions of community management, real estate management, equipment management, owner management, service management, parking space management and so on. Improve the level of property management, improve work efficiency and reduce costs.

Presentation

2024 Artificial Intelligence and Machine Learning (Computer Vision) *Singapore*

National University of Singapore Summer Program *Jul. 2024*

- Overall Grade: Distinction
- A distinction is awarded when a participant has taken a leading role in the course,has been interactive and has demonstrated a high capacity to understand and converse in English. This is a special award for outstanding performance and an encouragement to others.

The 22nd China Virtual Reality Conference *Kunming, Yunnan*

ChinaVR2022 *Nov. 2022*

- Report title: Three-dimensional reconstruction of hand integrating biomechanical constraints and multi-modal data.
- Discuss cutting-edge topics in the field of 3D modeling and content generation with doctoral and master students from Tsinghua University, Beijing University of Aeronautics and Astronautics, and Beijing University of Posts and Telecommunications.

13th International Conference on Graphics and Image Processing *Kunming, Yunnan*

ICGIP2021 *Aug. 2021*

- Report title: A Gesture Recognition Smart Media Interactive Application
- Discuss the next generation of human-computer interaction methods with domestic and foreign experts and scholars from Hokkaido University, Japan, Huazhong University of Science and Technology, etc.

Honors & Awards

Research competition

2023	**National First Prize,Team Leader**, The 6th China Virtual Reality Competition	*Suzhou, Jiangsu*
2023	**National Second Prize,Team Leader**, "Huawei Cup" 20th China Postgraduate Mathematical Modeling Competition	*Nanjing, Jiangsu*
2023	**Provincial First Prize,Team Member**, The 25th China Robot and Artificial Intelligence Competition	*Jiaxing, Zhejiang*
2022	**National First Prize,Excellent Display Award,Team Leader**, The 5th China Virtual Reality Competition	*Kunming, Yunnan*
2022	**National First Prize,Team Leader**, The 24th China Robot and Artificial Intelligence Competition	*Cixi, Zhejiang*
2021	**Provincial First Prize,Team Member**, China College Student Computer Design Competition	*Xianyang, Shaanxi*
2021	**School Competition Special Prize,Team Member**, The 11th National College Student E-Commerce "Innovation, Creativity and Entrepreneurship" Competition	*Xianyang, Shaanxi*

Domestic Awards

2023	**Outstanding Graduates of Higher Education Institutions in Shaanxi Province**, Shaanxi Province	*Xianyang, Shaanxi*
2023	**One Hundred Excellent Graduation Thesis (Design)**, Northwest A&F University	*Xianyang, Shaanxi*
2023	**Excellent Communist Party Member**, Northwest A&F University	*Xianyang, Shaanxi*
2023	**Outstanding College Student**, Northwest A&F University	*Xianyang, Shaanxi*
2023	**Excellent Anti-epidemic Volunteer**, Northwest A&F University	*Xianyang, Shaanxi*
2023	**College of Information Engineering Professional Scholarship (4 times)**, Northwest A&F University	*Xianyang, Shaanxi*

Volunteering

2021	**Ecological protection activities in Baoji City, Shaanxi Province**, Volunteer	*Baoji, Shaanxi*
2021	**COVID-19 Prevention and Control in the Community of Mei County, Baoji City, Shaanxi Province**, Volunteer	*Baoji, Shaanxi*
2021	**2021 Yangling International Marathon**, Volunteer	*Xianyang, Shaanxi*
2021	**The 28th Agricultural High-Tech Conference**, Volunteer	*Xianyang, Shaanxi*
2019	**School of Information Love Teaching Team**, Volunteer	*Xianyang, Shaanxi*
2018	**School of Horticulture Love Teaching Team**, Volunteer	*Xianyang, Shaanxi*

Social Practice

2021	**Empirical Analysis of the Impact of Smart Agriculture on the Income of Kiwifruit Growers in Meixian County, Shaanxi Province**, 2021 Summer Social Practice	*Baoji, Shaanxi*
2021	**Summary Report of 'Inheriting the Red Gene by Walking in a Hundred Museums and Learning the Four Histories to Strive to be a New Man of the Times'**, 2021 Winter Social Practice	*Baoji, Shaanxi*
2020	**Research on online education of primary and secondary school students in Xiaofayi Village, Meixian County, Baoji City, Shaanxi Province, during the period of epidemic prevention and control**, 2020 Summer Social Practice	*Baoji, Shaanxi*
2020	**Research on the Construction of a Large Data Demonstration Centre for Kiwifruit in Shaanxi**, 2020 Winter Social Practice	*Baoji, Shaanxi*
2019	**Research on Straw Utilisation in Guanzhong Region by School of Resources and Environment**, 2019 Summer Social Practice	*Baoji, Shaanxi*
2019	**Return Visit To High School To Promote NWAFU And Cheer On Seniors**, 2019 Winter Social Practice	*Baoji, Shaanxi*

School activities

2021 Cultural Programme for the Opening Ceremony of the School Games   *Xianyang, Shaanxi*
MEMBER   *2021*
- The Power of NWAFU.

2019 Cultural Programme for the Opening Ceremony of the School Games   *Xianyang, Shaanxi*
MEMBER   *2019*
- Descendants of the Dragon (i.e. Han Chinese).

Skills

Softwares	Vim, Unreal Engine 4, Blender, Maya, MATLAB, Adobe Illustrator, Unity
DevOps	AWS, Docker, Kubernetes, Rancher, Vagrant, Packer, Terraform, Jenkins, CircleCI, GCP, Github
Back-end	Koa, Express, Django, REST API
Front-end	Hugo, Redux, React, HTML5, LESS, SASS
Programming	Node.js, C++, Python, JAVA, OCaml, LaTeX, CUDA, Javascript, Go, Ruby, SQL
Languages	Chinese, English