

Jinze Huang

<https://rogerhuangpkx.github.io>

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EDUCATION

China Agricultural University (CAU)

Beijing, China

Bachelor of Engineering

09/2019-06/2023

Major: Computer Science and Technology, **GPA:** 3.64/4.00

Graduation Project: The development of an edge-computing agricultural-diseases-detection device

Major Courses:

- **Mathematics:** Advanced Mathematics I/II, Linear Algebra, Discrete Mathematics I/II/III, Questionnaire Statistical Analysis and Application of SPSS
- **Computers:** Computer Organization & Architecture I/II, Algorithms Design and Analysis, Data Structure, Computer Networks, Introduction to Computer Systems
- **Languages:** Computer Programming I/II (C/C++), Python Programming
- **Machine Learning:** Deep Learning and Machine Learning I/II, Statistical Machine Learning, Digital Image Processing and Experiment

ACADEMIC ACHIEVEMENTS

Publications:

- **Jinze Huang**, Guowei Xu, Yaojun Wang. “A comprehensive and systematic look up into object detection datasets: A review.” *Application of Electronic Technique*. Under Review
- **Jinze Huang**, Guowei Xu, Weiting Zhao, Qingxin Zhao, Xiaoqi Wang, Jing Niu, Yaojun Wang, Jingbo Zhao. “CSA-YOLO: a high-performance apple disease detection model.” *Computers and Electronics in Agriculture*. Under Review.
- Yaojun Wang, Yanyan Zhao, Jiawen Zhang, Yongqiang Qian, **Jinze Huang**, Qingxin Zhao, Zhiyi Zhao, Jingbo Zhao. “DiseSniper: A potato disease identification system based on the ResNet model.” In *the 2022 10th Intl. Conf. of Agro-Geoinformatics (Agro-Geoinformatics 2022)*, Quebec City, QC, Canada, 11-14 July 2022. <https://ieeexplore.ieee.org/document/9859214>
- Yan Li, **Jinze Huang**, Yan Ren, Wan Gao, Jing Jia, Sha Tao, Xinliang Liu. “Comparison of Inversion Methods for Maize Canopy Time-series LAI Based on SupReME Reconstructed Images.” *Journal of the ASABE*. 65(5): 1019-1028. (doi: 10.13031/ja.15011) @2022

Patents:

- Yaojun Wang, **Jinze Huang**, Jiawen Zhang, Crop data collection method, system, and device, filed on April 8, 2022, allowed on July 1, 2022, under China Patent Application No. CN202210369199.X
- Yaojun Wang, Jiawen Zhang, **Jinze Huang**, Crop disease identification method, device, equipment and storage medium, filed on April 12, allowed on July 19, 2022, under China Patent Application No.: CN202210383553.4
- **Jinze Huang**, Automatic counting hula hoop, filed on December 26, 2016, allowed on October 24, 2017, under China Patent Application No.: CN201621475222.X

Software Copyright:

- **Jinze Huang** (2022). 3D Pac-Man Software V1.0 (Registration No.: 2022SR0540581). National Copyright Administration of P.R. China.
- **Jinze Huang** (2022). Multi-core Cache Simulation Software V1.0 (Registration No.: 2022SR0540754). National Copyright Administration of P.R. China.
- Yunling Liu, Yiwen Wang, **Jinze Huang** (2021). Deep learning-based fruit recognition software in Orchard Environment V1.0 (Registration No.: 2021SRBJ0546). National Copyright Administration of P.R. China.
- **Jinze Huang** (2021). Conference room rental management system V1.0 (Registration No.: 2021SRBJ1136). National Copyright Administration of P.R. China.
- **Jinze Huang** (2021). Agricultural product storage management system V1.0 (Registration No.: 2021SRBJ1118). National Copyright Administration of P.R. China.
- **Jinze Huang** (2021). Rice and wheat planting simulation software V1.0 (Registration No.: 2021SRBJ1129). National Copyright Administration of P.R. China.
- **Jinze Huang** (2021). Multifunctional text editor software V1.0 (Registration No.: 2021SRBJ1112). National Copyright Administration of P.R. China.
- **Jinze Huang** (2021). Chinese Ethnic Culture Park Tour Guide System V1.0 (Registration No.: 2021SRBJ1127). National Copyright Administration of P.R. China.

RESEARCH EXPERIENCE

Labeling Apple Leaf Diseases in Corporation with Senior-High School Students

Beijing, China

Project Leader, Advisor: Dr. Yaojun Wang

02/2022-05/2022

- Formulated guidelines for annotating agricultural crop datasets;
- Developed a high school-university cooperative model to instruct high school students on labeling the datasets

Research on Identification and Classification of Plant Diseases and Insect Pests in Complex Scenes (Beijing College Students Innovation and Entrepreneurship Program) Beijing, China
Project Leader, Advisor: Dr. Yaojun Wang 03/2021-03/2022

- Developed an Android application to detect apple leaf diseases;
- Analyzed the image data of diseases and insect pests of specific crops in complex scenes based on machine learning algorithms to optimize existing frameworks, training sets, and algorithms
- Improved YOLOv5 with multi-network blocks to achieve a lightweight network and decreased parameters

Deep Learning-Based Fruit Recognition Software in Orchards Beijing, China
Project Leader, Advisor: Prof. Yunling Liu 03/2020-03/2021

- Labeled datasets of different types of fruit and developed a fruit detection desktop application;
- Constructed a YOLO v3 classification and recognition model with Darknet53 as the feature extraction network and analyzed the output of the model's predicted bounding box;
- Improved the network structure of the recognition model based on the analysis results to achieve the fruit classification and recognition function in complex scenes

INTERNSHIP & OTHER PRACTICAL EXPERIENCE

Pfizer Beijing, China
Intern in the Medical Department 04/2022-10/2022

- Assisted in preparing and organizing ASCO meetings;
- Helped with the compilation of the 2022 diagnostic criteria for breast cancer in China;
- Developed a small deep learning-based application, using the decision tree algorithm to assist with breast disease diagnoses and help patients obtain the most suitable treatment plans

Institute of Semiconductors, Chinese Academy of Sciences Beijing, China
Research Intern, Advisor: Dr. Liping Zhang 01/2022-03/2022

- Worked on human body reconstruction based on OpenPose and SMPL-X in the Image Cognitive Computing Research Group at the Laboratory of High-Speed Circuit and Neural Networks, aiming to achieve the mechanical arm's functions of finding acupuncture points and implementing acupuncture and moxibustion;
- Participated in the deployment, research, and loss reduction of the OpenPose part of work, responsible for 2D human body keypoints detection, 3D human body reconstruction, and identification of acupuncture points

Computer Vision in Smart Agriculture Research Team, CAU Beijing, China
Lab Technician, Advisor: Dr. Yaojun Wang 09/2021-Present

- Purchased a workstation for the lab and worked out an integrated configuration plan, including NAS and network switching equipment;
- Built a multi-person shared server system to achieve simultaneous use by multiple users;
- Responsible for the routine maintenance and repair of the workstation

ACHIEVEMENTS/AWARDS

- Third-class China Agricultural University Academic Scholarship 2022
- Honorable Mention in 2021 Interdisciplinary Contest in Modeling (ICM) 2021
- Second Prize in the First Artificial Intelligence Challenge (Programming) of China Agricultural University 2021
- Second Prize in 2021 National Student Mathematical Modeling Competition, Beijing Region Group A 2021
- Excellent Award of the 2nd Xingnong Cup Innovation Track of China Agricultural University 2021
- Outstanding Volunteer in Online Anti-epidemic in Changping District, Beijing 2021
- Xun Meng Wei Lai Corp. Scholarship 2020
- Second-class China Agricultural University Academic Scholarship 2020
- Provincial Excellence Award in 2019 National English Competition for College Students (NECCS) 2019

TECHNICAL PROFICIENCIES

- **Programming Languages:** Python, C/C++, Vue.js
- **Operating Systems:** Linux, Windows, macOS
- **Deep Learning Structures:** PyTorch, Scikit-Learn
- **Language Proficiency:** Chinese (Mandarin): Native speaker, English: Advanced