

# XIANGYU LU

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## OBJECTIVE

Observe and Interpret Remote Sensing Imagery with Deep-Learning and Photogrammetry Methods, towards the Automatic end-to-end Processing and Analyzing System for Eco & Ag Science.

## EDUCATION

<b>Zhejiang University   Ph.D., Agricultural Electrification and Automation</b>	Sep. 2020 - Jul. 2025
Research Field: Agricultural Information Technology	Hangzhou, China
<b>China Agricultural University   Exchange Student</b>	Sep. 2018 - Jul. 2019
Course Learning	Beijing, China
<b>University of Oxford   Summer Institute Program</b>	Aug. 2018
Summer Courses: Quantum Computing, Cosmology	Oxford, U.K.
<b>Northwest A&amp;F University   B.S., Agricultural Mechanization and Automation</b>	Sep. 2016 - Jul. 2020
Final GPA: 3.71 (rank: 2/75)	Yangling, China

## RESEARCH Abilities

Skilled in: Python Programming, CNN & Transformer Networks, Diffusion Models, UAV Sensing & QGIS.  
Interested in: Large-Area Eco & Ag Sensing, Multimodal Model, Contrastive Learning, Visual Prompting.

## RESEARCH PROJECTS

<b>Aerial Image Super-Resolution with Diffusion Model and Variance Attention</b>	Jan. 2023 - Oct.2023
<ul style="list-style-type: none"><li>Propose a variance-based attention (VASA) that enhanced various super-resolution models</li><li>Constructed a VASA-enhanced Diffusion Model for effective aerial image super-resolution</li></ul>	
<b>Automated Rice Phenology Mapping using UAV Images and Deep Learning</b>	Jul. 2022 - Dec. 2022
<ul style="list-style-type: none"><li>Improve the bilateral segmentation model for canopy extraction and phenology detection</li><li>Propose direct geo-locating and incremental sparse sampling for traits mapping</li></ul>	
<b>Grape Leaf Disease and Pest Diagnose Using Transformer Networks</b>	Jul. 2021 - Dec. 2021
<ul style="list-style-type: none"><li>Design a method of multi-model integration using prediction confidence</li><li>Propose a Transformer hybrid model achieving 98.51% mAcc on 11 categories</li></ul>	
<b>Wheat Field Weed Sensing System using UAV (Provincial Project: 5k funds)</b>	Mar. 2018 - Apr.2019
<ul style="list-style-type: none"><li>Good Ending Reward   As team leader and algorithm implementation coder</li><li>Construct a real-time 4-classes weeds detection system with UAV image sequence</li></ul>	

## AWARDS & HONORS

Award of Honor for Graduate 2020-2023 (top 15%, 3-times)	Dec. 2023
Special Award of Agricultural Equipment Innovation - ZOOMLION Cup 2020	Jun. 2020
President Scholarship 2017-2018 (top 5%)	Dec. 2018

## PUBLICATIONS

- Lu X**, Zhou J, Yang R, et al. 2023. Automated Rice Phenology Stage Mapping Using UAV Images and Deep Learning. *Drones*. 7(2):83. <https://doi.org/10.3390/drones7020083>
- Lu, X.**, Yang, R., Zhou, J., et al., 2022. A hybrid model of ghost-convolution enlightened transformer for effective diagnosis of grape leaf disease and pest. *Journal of King Saud University - Computer and Information Sciences*. 34(5):1755-1767. <https://doi.org/10.1016/j.jksuci.2022.03.006>
- Zhou, J., **Lu, X.**, Yang, R., et al., 2023. Developing thermal infrared de-ghost and multi-level nested conglutinated segmentation algorithm for detection of rice seed setting rate. *Computers and Electronics in Agriculture*. 207:107725. <https://doi.org/10.1016/j.compag.2023.107725>