Zohaib Khan

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Professional Summary

PhD candidate in Control Science and Engineering at Jiangsu University with 6+ years of experience in machine learning, object detection, and computer vision. Published 10+ SCI Q1 papers in agricultural robotics and vision systems. Skilled in developing deep learning models (YOLO, transformer-based detection, RCNN, etc.) and integrating AI perception with real-time robotic control. Seeking to apply AI research expertise to large-scale industrial perception systems.

Core Skills

- Deep Learning: PyTorch, TensorFlow, CNN, ViT etc.
- Computer Vision: Image Segmentation, Object Detection, Tracking.
- Control & Robotics: Path planning, Precision spraying.
- Programming: Python, MATLAB, C/C++, ROS.
- Tools: Git, Latex, OpenCV, Numpy, Pandas.
- Languages: English (Fluent), Chinese (Basic), Urdu (Fluent), Pashto (Native)
- Adobe Photoshop (Basic level, image editing, graphics creation).
- Linux
- CuDA

Selected Projects/ Research Highlights

- Deep learning improved YOLOv8 algorithm: Real-time precise instance segmentation of crown region orchard canopies in natural environment **(Computers and Electronics in Agriculture, SCI Q-1, First Author, Published)**.

- Optimizing precision agriculture: A real-time detection approach for grape vineyard unhealthy leaves using deep learning improved YOLOv7 with feature extraction capabilities **(Computers and Electronics in Agriculture, SCI Q-1, First Author, Published)**.

- Object Detection in Agriculture: A Comprehensive Review of Methods, Applications, Challenges, and Future Directions **(Agriculture-Basel, SCI Q-1, First Author, Published)**.

- Effects of optimization on user-based charging/discharging control strategy **(First Author, EI)**.

- A Single-Stage Navigation Path Extraction Network for agricultural robots in orchards **(Computers and Electronics in Agriculture, SCI Q-1, Co-Author, Published)**.

- A composite sliding mode controller with extended disturbance observer for 4WSS agricultural robots in unstructured farmlands **(Computers and Electronics in Agriculture, SCI Q-1, Co-Author, Published)**.

- Optimizing Robotic Spraying System for Sustainable Agriculture: Improved YOLOv8 with Grouped Depthwise Convolutions for Precise Pesticide Application on Diseased Tomato Leaves **(Sensors, SCI Q-2, Co-Author, Published)**.

- GTDR-YOLOv12: Optimizing YOLO for Efficient and Accurate Weed Detection in Agriculture **(Agronomy, SCI Q-1, Second Author, Published)**.

- A Hybrid Path Planning Algorithm for Orchard Robots Based on an Improved D* Lite Algorithm **(Agriculture-Basel, SCI Q-1, Co-author, Published)**.

- High Order Disturbance Observer Enhanced Explicit Nonlinear MPC for Robust Trajectory Tracking of Agricultural Robots **(IEEE Transactions on Industrial Electronics, SCI Q-1, Co-author, Published)**.

Publications in Process

- Precision Spraying of Orchard Trees: An Autonomous Vision-Guided Framework for Sustainable Pesticide Application **(IOT, SCI Q-1, First Author, In review)**.

Professional Qualification

- **PhD in Control Science Engineering** (Specializing in Machine Learning and Object Detection)

Jiangsu University, China

September 2022 – June 2026

- **Master of Science in Electrical Engineering** (Specializing in Power Systems and Renewable Energy)

Jiangsu University, China

September 2019 – June 2022

- **Bachelor of Science in Electrical Power Engineering**

Swedish College of Engineering and Technology, Wah Cantt, Pakistan

November 2013 – August 2017

- **Intermediate Studies (Pre-Engineering)**

Fazaia Degree College, Peshawar, Pakistan

July 2011 – March 2013

- **Secondary School Certificate (SSC)**

Agricultural University Public School and College, Peshawar, Pakistan

2009 – 2011

Experience

- Research Assistant, Jiangsu University (2020-Present)
- ✓ Led AI vision sub-projects in autonomous orchard robots, collaborating with multi-disciplinary teams (Controls + CV).
- ✓ Supervised more than 50 students on Machine learning/robotics projects; implemented real-time detection pipelines in python + OpenCV.
- **Electrical Engineer (CPEC Project), LIMAK (JV) ZKB (2017-2018)**
- ✓ Managed electrical installation and compliance for large-scale infrastructure project.

Achievements during study duration

- President of Engineering and Sports Association for International Students for 3 consecutive years.
- Certificate of participation in KPK Science Fair 2012-2013 by intel.
- First Prize in English Debate in Jiangsu University.
- Excellent Paper Award in Sino-conference organized by Jiangsu University 2021.
- Awarded as an Outstanding Student in the 17th "Yale School of Jiangsu University" program.
- Special Prize in Jiangsu Province Graduate Energy-saving and Low-Carbon Research and Innovation Practice Competition 2023.
- First Prize in National Competition of China University Business Elite Challenge 2024.
- First Prize in National Competition of Brand Planning 2024.
- Reviewed Research Articles for Sprainger Nature, MDPI, Elsevier journals (Agronomy, Sensors, Computers and Electronics in Agriculture).

Responsibilities and Technical Skills

- Reliable, hardworking, and trustworthy with a strong work ethic.
- Effective in both independent and team-based environments.
- Strong communications skills, with the ability to interact well across all levels of management.

- Knowledgeable in professional correspondence, maintaining a friendly and approachable demeanor.
- Quick learner and attentive listener with a proactive attitude.
- Responsible and well-organized, consistently meeting deadlines.
- Good with Time.
- Ability to work efficiently under pressure with minimal supervision.

Communication

Exceptional communication and presentations skills, effectively conveying data to diverse audiences, both in small and large groups. Experienced in adapting content and delivery style to suit varying levels of knowledge, in both domestic and international settings, primarily in English.

Personal Details

- Name — Engr. Zohaib Khan
- Gender — Male
- Date of Birth — 1994 Apr 10th
- Nationality — Pakistani
- Contact No. 1 — +86-15952905674

Declaration

I hereby declare that the information provided above is accurate to the best of my knowledge and belief. I am eager to contribute to your organization and uphold its reputation in the engineering field.

(Mr. Zohaib Khan)