Bi XuanMing

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Education Experience

Institution: South China Agriculture University (2020.9-2024.6)
Major： Software Engineering **Degree：** Bachelor Degree in Engineering
Cumulative GPA: 4.0 (out of 5.0)

Skills and Knowledge

English Proficiency： CET-4 568, CET-6 556, IELTS 7.0
Proficient Skills： Java, C++, Spring architecture, operation of database, Eclipse, Spring Tool Suite, IntelliJ, and other integrated development environments. Office tools and Adobe tools.
Self-Taught Skills： Python，Android，Sql，assembly language, machine learning and computer vision.
Other Skills： Casting processes, practical experience in laser engraving, virtual simulation technology, milling machine operation, 3D scanning and printing procedures, injection molding processes, and drone assembly.

Research Projects

Automated Localization and Quantitative Analysis of Dynamic Points in Professional Model Pose Performances (2023.6 - Present)
Project Leader
Main Aspects: Machine learning, Computer vision, dynamic value analysis, dataset construction.
Introduction: This study addresses pose assessment challenges for professional models by constructing a high-quality dataset, proposing an accurate key point localization model, and implementing automated dynamic value analysis. The research provides comprehensive and reliable data analysis methods for the field of model posing. The paper is currently under review.
Personal Contributions: Taking the responsibility of guiding the entire research direction, leading the team through the extensive dataset construction process, actively participating in model development and optimization, all to ensure that the research project meets the highest standards of quality.

Domain Transfer in Cross-Domain Facial Expression Recognition (2023.4 - Present)
Project participant
Main Aspects: Machine learning, Computer vision, global features, local features, category distribution matching.
Introduction: This research tackles the domain transfer challenge in cross-domain facial expression recognition (CD-FER). It introduces a pseudo-complementary label learning (PCLL) module and label reweighting (LR) module. By integrating global and local features, and utilizing credibility thresholds and label weights matching, effective domain-invariant feature learning and category distribution matching are achieved.
Personal Contributions: contributed to the research on cross-domain facial expression recognition (CD-FER), Specifically involved in label learning (PCLL) module

Enhancing Medication Adherence through Integrated Medication Management System (2022.10 – 2023.2)
Project participant
Main Aspects: Machine learning, Computer vision, Android
Introduction: This project combines 3D printing technology with smartphone functionality to

create a multi-purpose pillbox-phone case. The built-in polarizing system enables the smartphone camera to capture pillbox contents. An app complements this innovation by utilizing image detection to identify pill types and quantities, sending medication reminders via email.
Personal Contributions:
developing the companion app, integrating the YOLOv5s model into Android, Handling dataset creation and model training, bridged app development and machine learning.

Intelligent Resource Allocation Scheme for Cloud-Edge-End Framework in Multi-source Data Streams (2022.7 – 2023.5)
Project participant
Main Aspects: Multi-source data streams, edge computing, cloud-edge-end computing architecture, multi-source environment, proximal policy optimization (PPO), convex optimization.
Introduction: This project addresses intelligent resource allocation in a cloud-edge-end framework for handling diverse data streams generated by IoT devices. It explores an architecture where cloud servers and computing access points collaborate to process data streams, adapting to dynamic network conditions.
Personal Contributions: Focused on algorithm research, contributed to implementing the "ECC-PPO" scheme (Edge-Cloud Collaboration with Proximal Policy Optimization).

Key Point Localization and Automatic Measurement Analysis of Soybean Leaf Veins for Fine Phenotypic Analysis (2021.11 - 2022.11)
Project leader
Main Aspects: Machine learning, Computer vision
Introduction: This project centers on creating a diverse soybean leaf image dataset by cropping scanned data. Unlike previous research that solely focused on intact leaves, we aim to include damaged and diseased samples, expanding the scope of analysis.
Personal contributions: Led project coordination, including core framework development and model training.

Competition Experiences

Competition Experience 3 (2023.8): Participated in the "2023 Huashu Cup" Mathematical Modeling Competition in 2023 and won achieving a national second prize.
Competition Experience 2 (2023.5): Participated in the 15th "Electric Cup" Mathematical Modeling Competition in 2023 and gained achieving a national second prize.
Competition Experience 1 (2022.12): Participated in university-level innovation and entrepreneurship competition, successfully completed the project and received a campus-level award.

Internship Experiences

Internship Experience at Neusoft (Guangzhou) Co., Ltd. (2023.6 – 2023.9)
Back-end development intern (Project Team Leader)
Main Responsibilities: Led and participated in the development of a Spark-based big data analysis platform for an e-commerce company. The platform facilitated complex analysis of user behaviors, including visits, shopping, and ad clicks. Results supported decision-making, product design, and strategy enhancement.

Internship Experience at Laixun (Suzhou) Computer Technology Co., Ltd. (2023.4 - Present)
Back-end development intern
Main Responsibilities: Contributed to backend development for an indoor positioning system. Designed data reception modules for accurate device data retrieval. Developed parsing algorithms to format raw data for analysis. Assisted in data processing, filtering, and feature extraction. Enhanced platform communication for efficient data transmission.

Interests, Hobbies, and Extracurricular Activities

Redbird Intelligence Challenge Camp (2023.6)
Selected to participate in the Redbird Intelligence Challenge Camp organized by The Hong Kong University of Science and Technology (Guangzhou).

Directing and Filming Anti-Smuggling Microfilm Competition (2022.10)
Participated in a college competition and received a third-place award for directing and filming an anti-smuggling microfilm.

Vice President of College Alumni Association (2021.9 – 2022.6)
Assisted in organizing and planning recruitment events and alumni homecoming activities for the college alumni association.

Volunteer Services (2021.7 – 2022.9)
Participated in various volunteer activities such as community street garbage classification and traffic guidance, accumulating over 200 hours of service.

Participation in School Symphony Orchestra (2020.9 - Present)
Served as a cellist in the school symphony orchestra and holds an eighth-level certificate in cello performance.

CISV Summer Camp (2017.6 – 2017.9)
Attended the CISV study program organized by UNESCO in Canada, engaging in cross-cultural learning activities.