Qingling Duan

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Education

University of Chinese Academy of Sciences, China — Sep. 2020 – Jul. 2023

M.Eng., Computer Technology, GPA: 3.52/4

Beijing Institute of Technology, China — Sep. 2016 – Jul. 2020

B.Eng., Computer science and technology, GPA: 84.06/100

Project Experience

Three-Dimensional Force Sensor — Feb. 2021 – Jun. 2022

Three-Dimensional Force Sensor for Soft Materials

- Developed a ResNet-based regression model from scratch to accurately decouple 3D forces in soft materials.
- Collected and processed 24,000 force-deformation data samples using a synchronized acquisition system.
- Optimized model architecture, optimizer selection, and hyperparameters, achieving improved force prediction accuracy.
- Implemented force feedback control, enabling precise manipulation of fragile objects (e.g., potato chips, eggs), demonstrating the sensor’ s effectiveness in real-world applications.

Staff Exclusion — Jun. 2024

Staff Identification System for FootfallCam

- Collected and labeled a custom dataset, annotating front-facing individuals with and without name tags.
- Fine-tuned YOLOv8 on the custom dataset, optimizing detection accuracy for staff identification.
- Implemented bounding box matching to identify staff by detecting individuals whose name tags are fully enclosed within their bounding boxes.
- Achieved 92% accuracy, significantly improving automation in staff monitoring and access control.

Intern Experience

FESCO Adecco — Jan. 2025 – now

Automated Test Script Generation with Large Models and RAG

- Designed and implemented an RAG (Retrieval-Augmented Generation)-based test script generation system by retrieving test step-to-script data pairs, assembling few-shot prompts, and leveraging LLM generalization to produce high-quality test scripts.
- Phased implementation: Initially focused on generating single-step test scripts, then expanded to multi-step batch generation, ultimately achieving full test automation.
- Integrated code formatting, error handling, and optimization strategies to enhance code readability, executability, and overall test automation efficiency.

Awards

- The S Prize in the Mathematical Contest in Modeling(MCM) — 2018
- The scholarship in BIT (Four times) — 2017-2019

Publications

- **Qingling Duan**, Qi Zhang, Dong Luo, Ruofan Yang, Chi Zhu, Zhiyuan Liu, and Yongsheng Ou. “Three-Dimensional Force Sensor based on Deep Learning.” *1st International Conference on Cognitive Computation and Systems(ICCCS)*, Zhuhai, China, Sep. 2022.
- **Qingling Duan**, Qi Zhang, Zhiyuan Liu, and Yongsheng Ou.“Effect of pattern on the resolution of the visual-tactile sensor.” *IEEE International Conference on Robotics and Biomimetics (IEEE ROBIO)*, Xishuangbanna, China, Dec. 2022.

Skills

- Proficiency: Python, PyTorch, C
- Have experience: MATLAB, C++, Java