Yunyi Peng

15016034468 · 2405848522@qq.com · 1231Lisette · My Blog

Personal Information

- female，born in 2004

Education

- **Guangdong University of Technology (GDUT)** | Sept. 2023 – Present, B.S. in Information Engineering
- **GPA**: 3.993/4.0 (Ranked top of the class)
- **English Proficiency**: CET-4: 598 | CET-6: 581

Project Experience

- **PCL-based Architectural Point Cloud Processing & 3D Reconstruction**
  C++, PCL Library, Linux Shell, CloudCompare, CMake, JSON
  - Developed an automated architectural mapping solution using **PCL (Point Cloud Library)** to achieve low-cost, high-precision 3D reconstruction.
  - **Role & Contribution**: Led algorithm research and system debugging; implemented core algorithms including Conditional Filtering, Voxel Grid Downsampling, and Euclidean Clustering.
  - **Innovation**: Proposed an adaptive height measurement method based on **point cloud density distribution** to optimize structural segmentation.
  - **Impact**: Established an efficient development-to-analysis workflow using **Linux Shell** and **CloudCompare**, improving component extraction accuracy by 1%–10% compared to traditional PCA methods.

  https://github.com/1231Lisette/pcl
- **ROS Robot Car (STM32 & Raspberry Pi)**
  C, Python, ROS, CMake, Linux Shell
  - Developed a collaborative defense robot car for the 2023 Electronic Design Contest (NUEDC).
  - Integrated **Intel RealSense T265** for VIO-based positioning and visual odometry.
  - Built a distributed architecture where a Raspberry Pi 4B (Ubuntu 20.04) handled high-level ROS communication while the STM32 managed real-time motor control and encoder feedback.

  https://github.com/1231Lisette/mycar
- **Ground Station for "Wild Animal Patrol System" (2025 NUEDC)**
  Python, ROS, Linux Shell, HMI
  - Designed a mission-critical ground station using a **Raspberry Pi 4B** and a **Taojingchi HMI Serial Screen**.
  - **Core Functions**: Implemented dynamic no-fly zone configuration and automated path planning to ensure full coverage of the surveillance area.
  - **Connectivity**: Developed a robust local network communication system using **ROS topic pub/sub** mechanisms over Wi-Fi to synchronize real-time animal recognition data (species and count) between the drone and the ground station.
  - **Data Management**: Designed an HMI-based interface for real-time data

visualization and one-click historical data retrieval.

https://github.com/1231Lisette/2025TI_GS_and_Com

- **YOLOv8-based Intelligent Detection for HT22 Control Boxes**
  Python, PyTorch, YOLOv8, OpenCV, Linux Shell
  - Built an automated industrial inspection system for precise recognition of PCB components and screw states.
  - **Optimization**: Conducted performance benchmarks across YOLOv8n/s/m versions, selecting **YOLOv8s** (mAP50: 0.9886) as the optimal model.
  - **Data Integrity**: Identified and corrected a critical label-swap error in the original dataset ("no screw" vs. "PCB"), eliminating model misclassification.
  - **Results**: Through hyperparameter sensitivity experiments (Batch Size=16), improved PCB detection accuracy by **0.956**, enabling high-fidelity automated anomaly detection.

  https://github.com/1231Lisette/htt2_classification
- **Multi-task Manipulation with LeRobot & SmolVLA**
  Python, Deep Learning, VLA Models
  - Implemented vision-language-instruction based grasping and placing tasks on the **SO-101** robotic arm.
  - Fine-tuned the **SmolVLA** model using diverse demonstration datasets, verifying the model's task comprehension and generalization capabilities in low-data regimes.
  - Extended the project to dual-arm long-horizon tasks (e.g., opening drawers and placing objects) using **SmolVLA** and **PI0.5** models.

  https://github.com/1231Lisette/smolvla_demo
  https://www.bilibili.com/video/BV1ChiwBiERY/?share_source=copy_web&vd_source=b2f5f15ffb50d524fd0a4fe436c43b83
- **Dual-Arm Long-Horizon Tasks with xLeRobot (PI0.5 & SmolVLA)**
  Python, Multi-modal Models, xLeRobot, Dual-arm Coordination
  - Developed a long-horizon manipulation pipeline using the **LeRobot** and **xLeRobot** frameworks, integrating **SmolVLA** and **PI0.5** models.
  - Achieved a complex dual-arm sequential task: "Grasp object — Open drawer — Place object into drawer — Close drawer."
  - Optimized the coordination between dual arms to ensure smooth execution of temporally extended tasks involving both object manipulation and environmental interaction.

  https://www.xiaohongshu.com/user/profile/5edb8bb4000000000101dc11/6967b7f7000000000a02c791?xsec_token=AB8AMgQ9_r1PC76AoAuyxwHv1muvphDFcrc59KmNhSfac=&xsec_source=pc_user

Honors & Awards

- **1st Class University Scholarship** (2024-2025)
- **2nd Class University Scholarship** (2023-2024)
- **2nd Prize**, 16th National Mathematics Competition for College Students (Non-Math Category A)
- **3rd Prize**, Contemporary Undergraduate Mathematical Contest in Modeling (Guangdong Province)
- **3rd Prize**, 18th iCAN Student Innovation & Entrepreneurship Competition (South China Region)

- **3rd Prize**, 16th Blue Bridge Cup (Lanqiao) National Software & IT Talent Competition (EDA Design)
- **3rd Prize**, 12th "Datang Cup" National ICT Competition (Guangdong Province)
- **Successful Participant**, 2025 National Undergraduate Electronic Design Contest (NUEDC)

Skills

- ★★★ Python
- ★★★ C
- ★★☆ C++
- ★★☆ ROS
- ★★☆ Shell
- ★☆☆ PR
- ★★☆ PS
- ★★★ word、ppt
- ★☆☆ excel

Download PDF