

Yilin Zhu

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EDUCATION

Huazhong University of Science and Technology

Artificial Intelligence in School of Artificial Intelligence and Automation

Wuhan, China

Sep 2021 - Present

- **GPA:** 4.23/5.00 (87.4/100)

RESEARCH EXPERIENCE

Research Project in Image Matting

Stereo Matching And leaRning Technologies, HUST.

Nov 2022 - May 2023

- **Introduction:**
The project aims to warm up with image matting.
- **Functions:**
 1. Organize existing SOTA algorithms and loss functions of image matting and compare their advantages and disadvantages.
 2. Label a new dataset for image matting.
- **Responsibilities:**
 1. Read papers to understand SOTA models in image matting.
 2. Refine existing code for various models in image matting.
 3. Run basic experiments to compare the performance of different models.
 4. Select and label the images for the new dataset.

PROJECTS

DARPA AIxCC

University of Colorado Boulder

Jan 2024 - Current

- **Introduction:**
The project aims to design novel AI systems to secure critical code.
- **Functions:**
 1. Use Codeql analysis to reduce search space.
 2. To be determined.
- **Responsibilities:**
Compiled many Codeql databases for future analysis and operating.

CSE 466 & 494 of ASU

Online course taught by myself

Oct 2023 - Current

- **Introduction:**
This is a course with basic knowledge of computer security. The homework of the course is to exploit the binaries with specific vulnerabilities.
- **Skills Acquired:**
Find and exploit the vulnerabilities of the given code.

6.S081 2021 Course Lab

Online course taught by myself

Sep 2023 - Dec 2023

- **Introduction:**
This is a course with basic knowledge of operating system. The lab of the course is to implement new features for XV6, a simplified UNIX operating system.
- **Skills Acquired:**
Use Qemu and Gdb to debug operating system.

Intelligence+ Track in College Students Engineering and Innovation Competition

Science & Technology Innovation Center, HUST.

Feb 2022 - March 2023

- **Introduction:**

The project aims to build a trash classification system that automatically sorts the trash into different categories.

- **Functions:**

1. Build a AI system to detect and classify the trash.
2. Deploy the system on a embedded system.
3. Design a mechanical structure to sort the trash.

- **Responsibilities:**

1. Label a dataset for classification of particular trash.
2. Fine-tun YoloV5 model for detecting and classifying the objects.
3. Deploy and accelerate the model on Nvidia Jetson Nano using Tensorrt.
4. Transfer signals to a microcontroller to control the mechanical structure.

Electronic & Electrical Engineering Course Design

Science & Technology Innovation Center, HUST.

Mar 2022 - Mar 2022

- **Introduction:**

The project aims to build a self balance vehicle with dual wheels.

- **Tasks:**

1. Design the mechanical structure of the vehicle.
2. Design and build the circuit and select the sensor for the vehicle.
3. Build the control system of the vehicle based on STM32 and other sensors.

C PL Class Project

Wuhan, China

Jan 2022 - May 2022

- **Introduction:**

The project aims to implement a USV emulator inside Dosbox.

- **Functions:**

1. Implement graphic and UI interfaces with Dos API.
2. Select some points on a map and the ship will find optimal path to traverse the points.

- **Responsibilities:**

1. Implemented A* algorithm to find path between points for a rasterized map.
2. Implement Dijkstra's algorithm to find optimal order when traversing the points.

TECHNICAL SKILLS

Programming Languages: C, Python, C++

Libraries and Tools: Pwndbg, PyTorch, OpenCV, Git