System User Manual

Course: Digital Image Processing

Project: Intelligent Proctoring Behavior Detection System
Based on YOLOv8

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1 System Requirements

1.1 Hardware Requirements

RAM: Minimum 8GB.

Camera: Built-in webcam or external USB camera.

1.2 Software Requirements

OS: macOS OR Windows 10/11.

Python: Version 3.8 or higher.

Core Libraries: Ultralytics, OpenCV, PyTorch.

2 Installation Guide

2.1 Step 1: Environment Setup

Option A: For macOS Users

Open **Terminal** and check version:

```
python3 --version
```

Option B: For Windows Users

Open **PowerShell** and check version:

```
python --version
```

2.2 Step 2: Install Dependencies

Install the required libraries using pip.

Command :

```
# macOS usually uses 'pip3', Windows uses 'pip'
pip install ultralytics opencv-python
```

2.3 Step 3: File Preparation

Ensure your project folder contains:

```
best.pt
```

```
data_video.mp4
```

3 Operation Instructions

Please choose the instruction set corresponding to your operating system.

3.1 Instructions for macOS

1. Real-time Proctoring (Webcam)

```
#Pay attention to spaces
yolo predict model=best.pt source=0 show=True conf=0.5
```

2. Video File Analysis

```
#Pay attention to spaces
yolo predict model=best.pt source='data_video.mp4' save=True
```

3.2 Instructions for Windows

1. Real-time Proctoring (Webcam)

```
#Pay attention to spaces
yolo predict model=best.pt source=0 show=True conf=0.5
```

> **Windows Troubleshooting**
>
> If you encounter the error *"'yolo' is not recognized"*, try running via python module: `python -m ultralytics predict model=best.pt source=0 show=True conf=0.5`

2. Video File Analysis

```
#Pay attention to spaces
yolo predict model=best.pt source=data_video.mp4 save=True
```