 # Update package list and install required system packages

sudo apt update && sudo apt install -y \

python3 python3-pip \ **# Python and pip**

git cmake build-essential \ **# Tools to build from source**

libssl-dev libusb-1.0-0-dev libudev-dev \ **# USB and system dependencies**

libgtk-3-dev pkg-config \ **# GUI support**

libglfw3-dev libgl1-mesa-dev \ **# OpenGL dependencies**

librealsense2-dkms librealsense2-utils \ **# RealSense drivers and tools**

librealsense2-dev librealsense2-dbg && \ **# RealSense SDK headers and debug info**

 # Clone the Intel RealSense SDK and build it

git clone https://github.com/IntelRealSense/librealsense.git && \

cd librealsense && mkdir build && cd build && \

cmake ../ && make -j$(nproc) && sudo make install && \

 # Add udev rules so the camera can be accessed without root

sudo cp ../config/99-realsense-libusb.rules /etc/udev/rules.d/ && \

sudo udevadm control --reload-rules && sudo udevadm trigger && \

 # Upgrade pip and install Python libraries

pip install --upgrade pip && \

pip install pyrealsense2 \ **# Python RealSense bindings**

opencv-python \ **# OpenCV for image processing**

ultralytics \ **# YOLOv8 model library**

torch torchvision --index-url https://download.pytorch.org/whl/cpu

 # PyTorch CPU

realsense-viewer **# Launch the RealSense GUI to test the camera**