# Meishan:

20220403

**ORI\_SLAM3 github**

<https://github.com/UZ-SLAMLab/ORB_SLAM3/tree/a80b4677009e673b9939a7e91e6ea7bcb5090294>

**ORI\_SLAM3 setup**

[**https://www.ybliu.com/2020/07/ORB-SLAM3-demo.html**](https://www.ybliu.com/2020/07/ORB-SLAM3-demo.html)

(Note: opencv↓ and ORI SLAM3↓ (follow github readme) and rest here.↑)

**OpenCV tutorial**

<https://docs.opencv.org/4.x/d7/d9f/tutorial_linux_install.html>

Step:

1. Build core modules
2. Configure and build
3. Install

Follow **Building ORB-SLAM3 library and examples** from github **ORI\_SLAM3 github**

**Issues and solution:**

**Pangolin Visualization not showing:**

“ORB\_SLAM3::System SLAM(argv[1],argv[2],ORB\_SLAM3::System::MONOCULAR, true); (line 83)

check this code, the last param should be 'true'.”

(Path: /home/m33/eece5554\_final\_project/ORB\_SLAM3/Examples/Monocular/mono\_euroc.cc)

<https://github.com/UZ-SLAMLab/ORB_SLAM3/issues/517>

**EuRoC Examples**

datasets

<https://projects.asl.ethz.ch/datasets/doku.php?id=kmavvisualinertialdatasets>

Gravity Acceleration 9.81m/s^2 in code?

9.80379 m/s^2 at Boston,MA

May affect the data of z-axis

Paper - datasets parameters - for data analysis

<https://journals.sagepub.com/doi/pdf/10.1177/0278364915620033>

Kitti

<http://www.cvlibs.net/datasets/kitti/eval_odometry.php>

20220424

Kitti dataset analysis:

<http://20sep1995.blogspot.com/2019/02/how-to-run-orb-slam-with-kitti-dataset.html>

<http://edge.rit.edu/edge/C18501/public/ORB-SLAM-Experiments-and-KITTI-Evaluation_17006594.html>

<https://stackoverflow.com/questions/60639665/visual-odometry-kitti-dataset>

Size x 15

KeyFrame (ground truth use all frames but ORBSLAM only save keyframe)

/home/m33/eece5554\_final\_project/ORB\_SLAM3/src/System.cc

Line 1206 void System::SaveTrajectoryKITTI(const string &filename)

/home/m33/eece5554\_final\_project/ORB\_SLAM3/src/Map.cc

Line 147 vector<KeyFrame\*> Map::GetAllKeyFrames()

# Mingxi:

## ORB-SLAM3 installation 20220403

1. Ran into error when ran the following pangolin building tutorial

“cmake --build . -t pypangolin\_pip\_install”

Solution:

Use this tutorial instead:

<https://www.ybliu.com/2020/07/ORB-SLAM3-demo.html>

1. Ran into error when buiding ORBSLAM3 using build.sh

“/usr/local/include/sigslot/signal.hpp:109:79: error: ‘decay\_t’ is not a member of ‘std’; did you mean ‘decay’?”

Same problem:https://github.com/UZ-SLAMLab/ORB\_SLAM3/issues/458

Solution:

Modify build.sh by:

sed -i 's/++11/++14/g' CMakeLists.txt

1. Opencv 4.4.0 prerequisites:

Need python2 with numpy by:

sudo apt install python-numpy

Need link python with python2 by:

alias python=”python2”

Need install gstreamer

<https://gstreamer.freedesktop.org/documentation/installing/on-linux.html?gi-language=c>

Need atlas

Same issue: <https://github.com/opencv/opencv/issues/10442>

Install liblapacke-dev

## ORB-SLAM3 Examples 20220403

1. In order to use plug-in realsense cameras, librealsense needs to be installed before building orbslam, only then the executable file will be compiled in Examples.
2. Modify the yaml (calibration) and .cc (streaming) to use other cameras.

## Testing on iPhone webcam app 20220410

1. Droidcam need gstreamer on ubuntu. Cannot use the GUI client which will

## Objectives:

1. Run ORBSLAM with dataset and analysis
2. Run ORBSLAM on iPhone using webcam
3. Collect indoor data and analysis
4. Collect outdoor data and analysis
5. A visual odometry app on iPhone
6. An ORBSLAM app on iPhone -> save trajectory
7. ORBSLAM on Racing game
8. low-cost metaverse: 3d reconstuction + SLAM at home
9. Presentation slides

* Intro to ORBSLAM (racing game)
* Bugs and installation
* Data analysis (indoor and outdoor)
* Application (low-cost metaverse)

# Guanang

## Xcode 20220403

1. iPhone 13 Pro does not work on both simulation and real machine.
2. Need to set up the camera in private env parameters.
3. ‘Unable to install the app’: go to the TARGETS -> select[your project name] -> General -> Frameworks,Libraries,and EmbeddedContent -> set the framework with [Do Not Embed]

<https://developer.apple.com/forums/thread/679182>

1. ‘failed to prepare device for deployment’ & ‘This operation can fail if the version of the OS on the device is incompatible with the installed version of Xcode.’: check XCode version, check iOS version, restart the XCode (computer) and iPhone
2. Storyboard ID: <https://www.raywenderlich.com/5055364-ios-storyboards-getting-started>
3. Xcode UIView.init(frame:) must be used from main thread only: Main Thread Checker <https://stackoverflow.com/questions/46362641/xcode-uiview-initframe-must-be-used-from-main-thread-only> <https://medium.com/@trivediniki94/main-thread-checker-in-xcode-8b9f3f8ce10>
4. SWIFT\_VERSION '3.0' is unsupported, supported versions are: 4.0, 4.2, 5.0. <https://stackoverflow.com/questions/55366024/how-to-fix-swift-version-3-0-is-unsupported-supported-versions-are-4-0-4-2>
5. Link main storyboard with code: <https://stackoverflow.com/questions/46553129/xcode-how-to-view-two-files-side-by-side>
6. Sign up: <https://stackoverflow.com/questions/31039513/how-can-i-skip-code-signing-for-development-builds-in-xcode#:~:text=To%20turn%20the%20code%20signing,all%20of%20the%20Targets%20separately>.
7. Xcode has conflicting provisioning settings: <https://stackoverflow.com/questions/42885122/xcode-has-conflicting-provisioning-settings>
8. Xcode error "Can't install application ... [appname].app requires the " z" capability which is not supported by [devicename] <https://stackoverflow.com/questions/34272690/xcode-error-cant-install-application-appname-app-requires-the-z-capab>
9. Swift Initializer for conditional binding must have Optional type, not '[AVCaptureDevice]' <https://stackoverflow.com/questions/47843403/swift-initializer-for-conditional-binding-must-have-optional-type-not-avcaptu>

EuRoc Example

1. Download the dataset from website: <https://projects.asl.ethz.ch/datasets/doku.php?id=kmavvisualinertialdatasets#downloads>
2. Move the dataset