
Mosaic Magnifique

Guide

August 1, 2020

Contents

| | | |
|----------|---------------------------------|----------|
| 1 | Install Instructions | 2 |
| 1.1 | Pre-built | 2 |
| 1.2 | Dependencies | 2 |
| 1.3 | Optional Dependencies | 2 |
| 1.4 | Linux | 2 |
| 1.4.1 | Ubuntu | 3 |
| 1.4.2 | Other | 3 |
| 1.5 | Windows | 3 |
| 1.5.1 | Batch script | 3 |
| 1.5.2 | Manual | 4 |

Chapter 1

Install Instructions

1.1 Pre-built

Download the pre-built Windows app from: <https://github.com/MorganGrundy/MosaicMagnifique/releases>
Only use the CUDA version if you have a [CUDA-capable GPU](#) or the app will just crash.
You may need to run the included vc_redist executable first.

1.2 Dependencies

| Name | Version | Modules |
|---|-----------------------------|-----------------------------------|
| GCC/MinGW or MSVC | $\geq 8.0.0$ ≥ 2017 | |
| Qt | $\geq 5.9.5$ | core, gui, svg, widgets |
| OpenCV | $\geq 4.1.1$ | core, highgui, imgcodecs, imgproc |

1.3 Optional Dependencies

If you have a [CUDA-capable GPU](#), then you can use the following to generate Photomosaics faster.
Currently only Windows .pro file has CUDA linking setup.

| Name | Version | Modules |
|--------------------------------|--------------|---|
| CUDA | ≥ 10.1 | |
| OpenCV Contrib | $\geq 4.1.1$ | cudaarithm, cudafilters, cudaimgproc, cudawarping |

CUDA usage controlled by "CONFIG += CUDA" in .pro file.

OpenCV Contrib usage controlled by "CONFIG += OPENCV_W_CUDA" in .pro file.

Note: OpenCV Contrib requires CUDA.

1.4 Linux

Linux .pro file requires [pkg-config](#) for linking OpenCV.

1.4.1 Ubuntu

The provided [install-ubuntu.mk](#) makefile can be used to easily install dependencies and build Mosaic Magnifique. Tested on Ubuntu 20.04 + 18.04.

```
make -f install-ubuntu.mk all
```

or instead can install dependencies separately:

```
make -f install-ubuntu.mk gcc
make -f install-ubuntu.mk pkg-config
make -f install-ubuntu.mk qmake
make -f install-ubuntu.mk qt
make -f install-ubuntu.mk opencv
make -f install-ubuntu.mk build
```

1.4.2 Other

Qt

Use installer or build from source: <https://doc.qt.io/qt-5/gettingstarted.html>

OpenCV

Build from source: https://docs.opencv.org/master/d7/d9f/tutorial_linux_install.html

In configuring step give cmake: `-DOPENCV_GENERATE_PKGCONFIG=ON`

`-DCMAKE_BUILD_TYPE=Release`

And for minimal build give cmake module list: `-DBUILD_LIST=core,imgcodecs,imgproc,highgui`

Mosaic Magnifique

Download source from: <https://github.com/MorganGrundy/MosaicMagnifique/releases>

Create sub-directory "build"

From build run:

```
qmake ../src/MosaicMagnifique-Linux.pro
make
```

1.5 Windows

1.5.1 Batch script

The provided [install-windows.cmd](#) batch script can be used to help install OpenCV and build Mosaic Magnifique, but not MSVC/CUDA/Qt.

It has an additional dependency: [wget](#). Set environment variable `%wgetdir%` to the directory containing `wget.exe`.

After installing other dependencies, run the script with admin (Setting OpenCV environment variables requires admin) from command line:

```
set mode=all
install-windows.bat
```

If you have installed OpenCV manually then instead:

```
set mode=build
install-windows.bat
```

1.5.2 Manual

MSVC

Download MSVC installer from: <https://visualstudio.microsoft.com/downloads/>

Run installer and select Workload "Desktop development with C++", the minimum needed is MSVC C++ x64/x86 build tools and Windows SDK.

Qt

Use installer or build from source: <https://doc.qt.io/qt-5/gettingstarted.html>

Add Qt bin to %PATH% environment variable.

CUDA (Optional)

Download CUDA installer from: <https://developer.nvidia.com/cuda-downloads>

OpenCV

Build from source: https://docs.opencv.org/master/d3/d52/tutorial_windows_install.html

In configuring step, give cmake: -DCMAKE_BUILD_TYPE=Release

And for minimal build give cmake module list: -DBUILD_LIST=core,imgcodecs,imgproc,highgui

If you are using CUDA you can give cmake: -DWITH_CUDA:BOOL=ON

-DOPENCV_EXTRA_MODULES_PATH="C:/Path to/OpenCV Contrib/modules"

And add the relevant contrib modules to module list:

-DBUILD_LIST=core,imgcodecs,imgproc,highgui,cudaarithm,cudawarping,cudaimgproc,cudafilters

Mosaic Magnifique

Download source from: <https://github.com/MorganGrundy/MosaicMagnifique/releases>

Create sub-directory "build"

From build run:

```
qmake ../src/MosaicMagnifique-Windows.pro -spec win32-msvc
jom qmake_all
jom
```