OpenCV for Unity 1.2.0

iOS & **Android** support
Win & **Mac** Standalone support(if Unity4,Pro only)
Support for preview in the **Editor**(if Unity4,Pro only)
Work with Unity Free & Pro

System Requirements
Build Win Standalone & Preview Editor : Windows7 or later
Build Mac Standalone & Preview Editor : OSX 10.8 or later

OpenCV for Unity is an Assets Plugin for using **OpenCV** from within **Unity**.

- Since this package is **a clone of OpenCV Java**, you can use as it is **all** the API Reference OpenCV Java 2.4.11 (link). (“org.opencv.android” and “SURF and SIFT of org.opencv.features2d” are excluded)
- You can image processing in **real-time** by using the **WebCamTexture** capabilities of Unity. **(real-time face detection works smoothly in iPhone 5)**
- Provides a method to interconversion of **Unity's Texture2D** and **OpenCV's Mat**.
- Includes many classes from OpenCVForUnity, and implements **IDisposable**. You can manage the resources with the **"using"** statement.

Please download Demo Application for Android and watch Setup Tutorial Video(Unity4 Unity5).

API Reference OpenCV for Unity

SampleCode using OpenCV for Unity is available.

- MarkerBased AR Sample
- FaceTracker Sample
- Voforia with OpenCV for Unity Sample
- Kinect with OpenCV for Unity Sample

If you want to try the Beta4 Version of "OpenCV for Untiy" based on "OpenCV3.0.0" , unzip the OpenCVForUntiy3.0.0-beta4.zip, please replace the "OpenCVForUnity" folder. "OpenCV for Untiy" based on "OpenCV3.0.0" support Unity5.not support Unity4.

Version changes

1.2.0 [Common]Add Utils. getGraphicsDeviceType(). [Common]Add SampleScene Setup Tutorial Video for Unity5.

1.1.9 [Common]Add CamShiftSample.(Object Tracking) [Common]Add OpenCVForUnityMenuItem.cs.(This script set plugin import settings automatically from MenuItem.)

1.1.8 [iOS] Fix problem when working with Metaio(UnityAppController problem). [iOS]Change file name from "OpenCVForUnity/Plugins/iOS/MyAppController.mm" to "OpenCVForUnity/Plugins/iOS/OpenCVForUnityAppController.mm".[Common]Add [System.Serializable] to basic class. [iOS]Move "OpenCVForUnity/ iOSforXcode/iOS_BuildPostprocessor.cs" to "OpenCVForUnity/Editor"folder. [Common] Add Beta2 Version of "OpenCV for Untiy" based on "OpenCV3.0.0"(support Unity5).

1.1.7 [Common] Update to OpenCV2.4.11. [Common] Add Beta Version of "OpenCV for Untiy" based on "OpenCV3.0.0"(support Unity5).

1.1.6 [Common]Fix FaceRecognizer.cs(Compile Error had happened only in the case of Unity4 Non Pro License).

1.1.5 [Common]Add Beta Version of "OpenCV for Untiy" based on "OpenCV3.0.0-rc1"(support Unity5). [Android]Fix Utils.getFilePath(). [Common]Add WebCamTextureAsyncDetectFaceSample. [iOS]Change folder name from "OpenCVForUnity/iOS for Xcode/" to " OpenCVForUnity/iOSforXcode/".Add iOS_BuildPostprocessor.cs.

1.1.4 [Common]Add FaceRecognizer subclass. [Common]Add FaceRecognizerSampleScene. [Common]Fix SampleScene.

1.1.3 [Common]Fix SampleScene. [Common] Change Property of Platform Dependent Compilation from UNITY_IPHONE to UNITY_IOS.

1.1.2 [Common]Fix the direction of rotation of the mat that is converted from WebCamTexture.

1.1.1 [Common]Add OpticalFlowSampleScene. [Common]Fix SampleScene. [Common] Fix function name of CvANN_MLP_TrainParams class.

1.1.0 [Common]Divide asset for Unity4 and Unity5.

1.0.9 [Common]Support for Unity5.

1.0.8 [Common]Update to OpenCV2.4.10

1.0.7 [iOS]Support for arm64 build target.(Unity 4.6.1p3 or higher) [Common]Add Constructor VideoCapture(string filename). [Common]Add Method copyToMat(),copyFromMat().

1.0.6 [Android]Support for x86 build target.(Unity 4.6 or higher)

1.0.5 [Common] Bug fixes SampleScene.

1.0.4 [Common]Add Method matToTexture2D(Mat mat, Texture2D texture2D, Color32[] bufferColors = null).

1.0.3 [Common]Support for preview in the Editor.(Pro only) [Common]Support for Win & Mac Standalone.(Pro only) [Android]Change of location of the file that you want to use for Utils.getFilePath().Changed to use "Aseets/StreamingAssets/" folder. [iOS] Add the file that you want to use for Utils.getFilePath() to Xcode project is no longer required.Changed to use"Aseets/StreamingAssets/" folder.

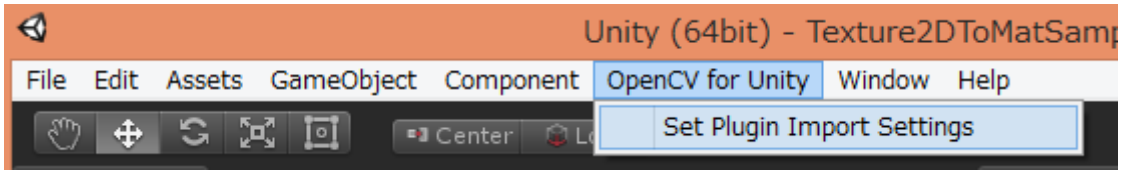
1.0.2 [iOS]fix library(libjpeg,libpng) version coflicts.

1.0.1 Initial version

In Unity4 and Unity5 the different files to be imported. When you update the project that you made in Unity4 to Unity5, please import again this asset in Unity5.

Quick setup procedure to run the sample scene(Setup Tutorial Video Unity4 Unity5)

1. If Unity4, Move "OpenCVForUnity/Plugins/"folder to "Assets/"folder.
2. If Unity5,Select MenuItem[OpenCV for Unity/Set Plugin Import Settings].

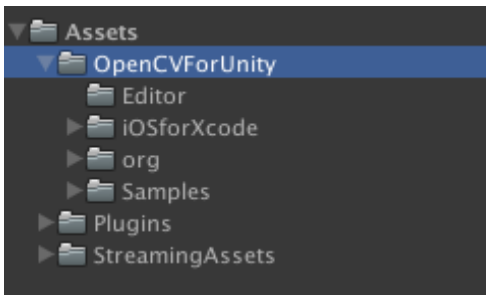


3. Move "OpenCVForUnity/StreamingAssets/"folder to "Assets/"folder.
4. Please set [PlayerSettings]-[Resolution and Presentation]-[Orientation]-[Default Orientation : Portrait] when you build the sample scene.
5. Add all of the "***.unity" in the "OpenCVForUnity" folder to [Build Settings] – [Scene In Build].

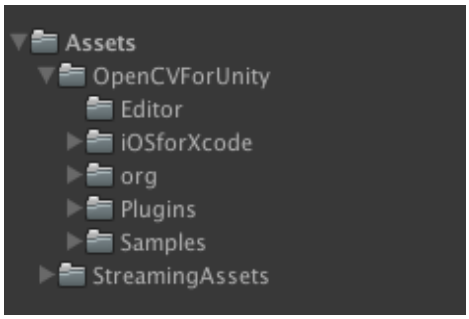
※Inspector Setting of "opencv2.framework" and "opencvforunity.bundle" might have been reset at the time of import. In that case, re-setup is required.

Screenshot after the setup

Unity4



Unity5



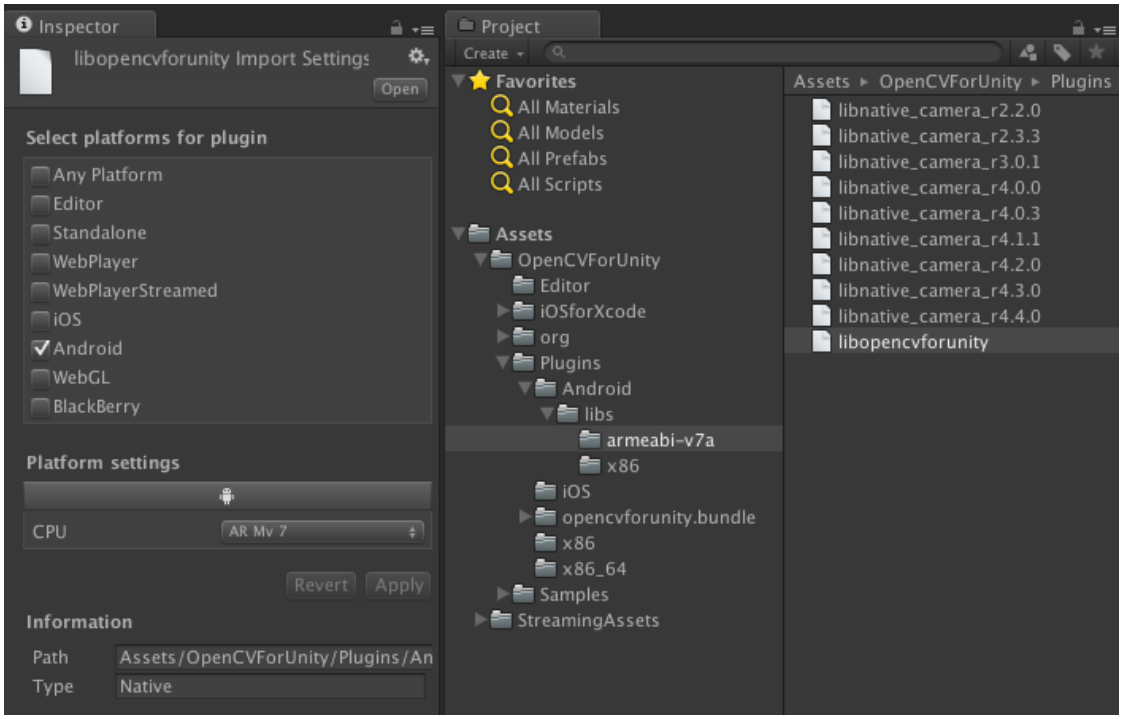
Android Setup Procedure

Unity4

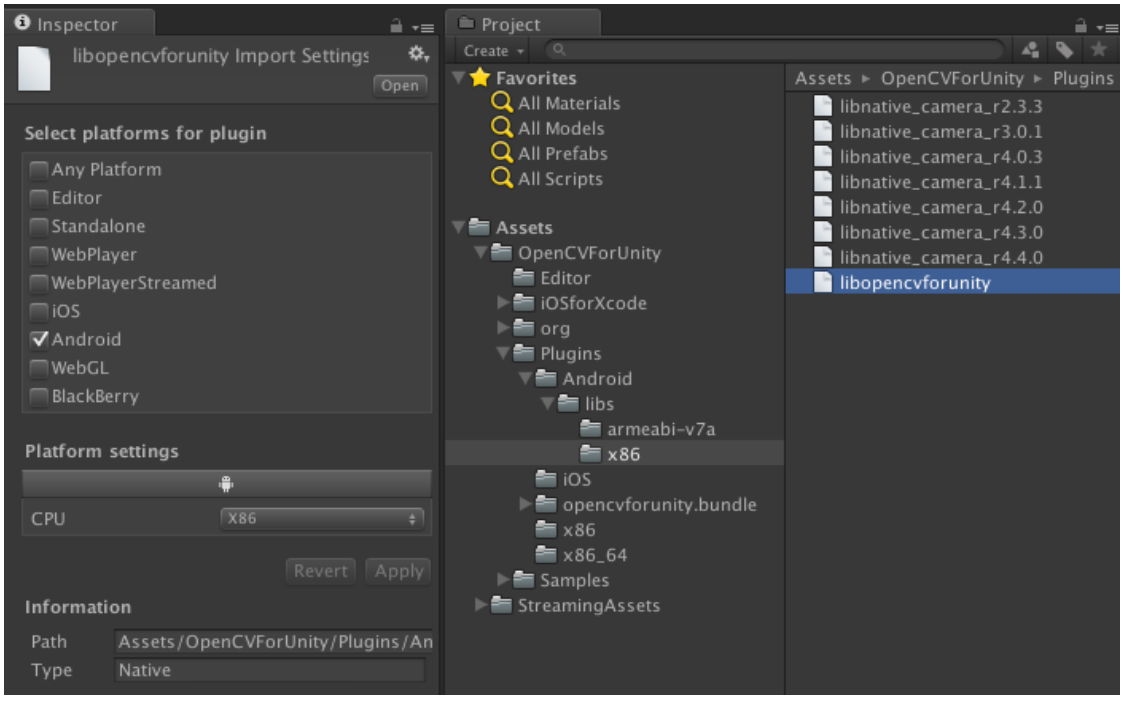
- Copy from “OpenCVForUnity/Plugins/Android/” to “Assets/Plugins/Android/” folder.(libnative_camera_r*.*.*.so is only required when using the VideoCapture.)

Unity5

- “OpenCVForUnity/Plugins/Android/opencvforunity.jar” – Select platform Android in Inspector.
- “OpenCVForUnity/Plugins/libs/armeabi-v7a/*.so” - Select platform Android and CPU ARMv7 in Inspector. (libnative_camera_r*.*.*.so is only required when using the VideoCapture.)



- "OpenCVForUnity/Plugins/libs/x86/*.so" – Select platform Android and CPU x86 in Inspector.(libnative_camera_r*.*.*.so is only required when using the VideoCapture.)



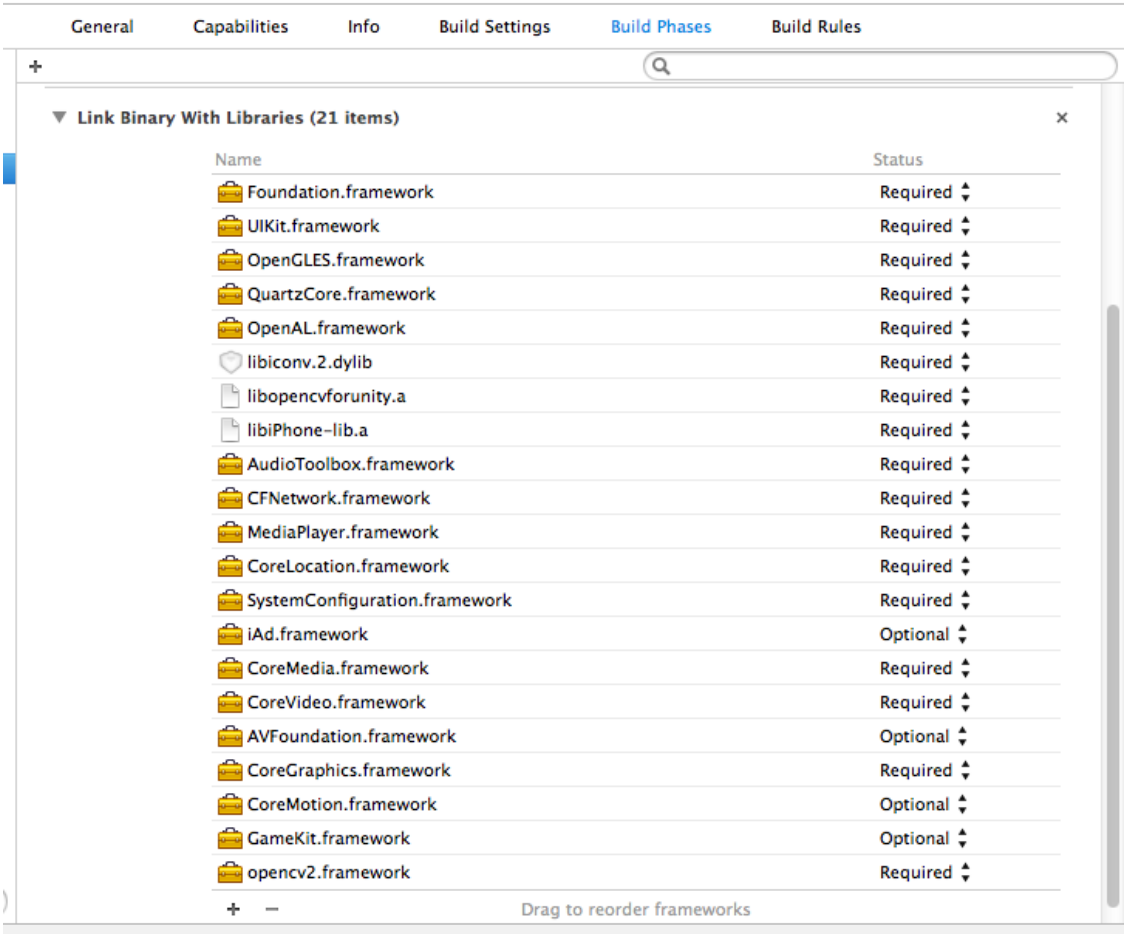
- Put the file that you want to use for Utils.getFilePath() in the

“Aseets/StreamingAssets/”folder. (haarcascade_frontalface_alt.xml etc is for OpenCVForUnitySample.scene. Please copy only when necessary.)

iOS Setup Procedure

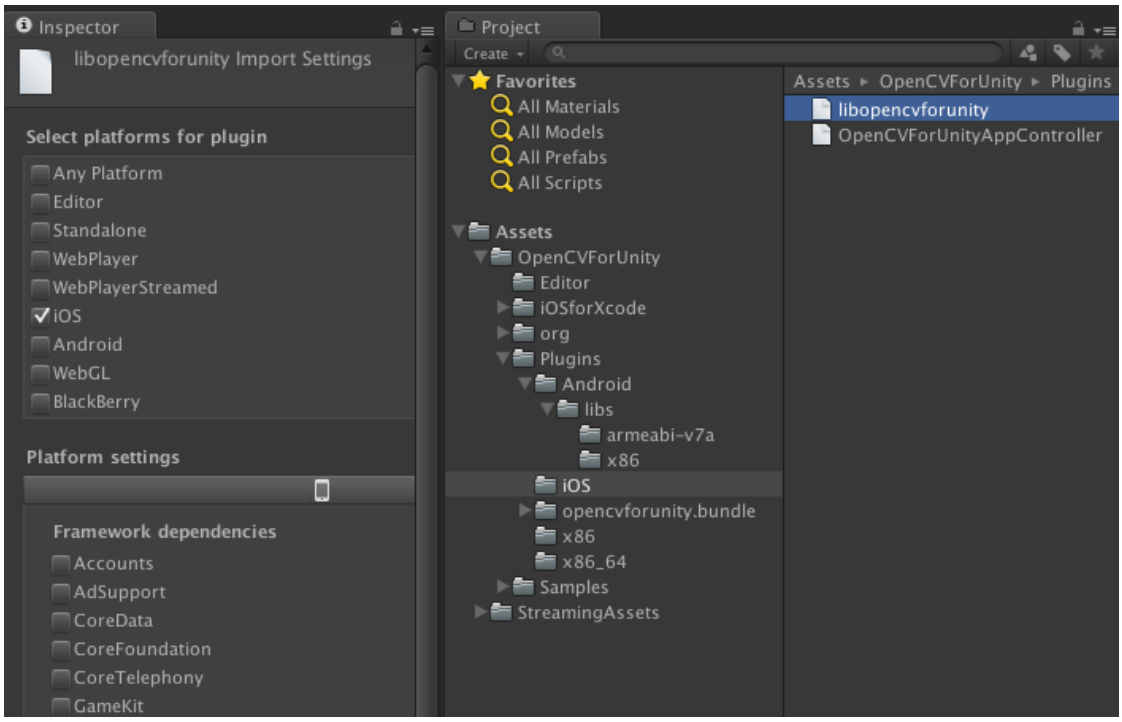
Unity4

- Copy from “OpenCVForUnity/Plugins/iOS/” to “Assets/Plugin/iOS/” folder.
- Link “OpenCVForUnity/iOSforXcode/opencv2.framework” to Xcode project. (in Xcode project. Build Phases > Link Binary with Libraries > Add opencv2.framework . recommend to use PostprocessBuildPlayer.)

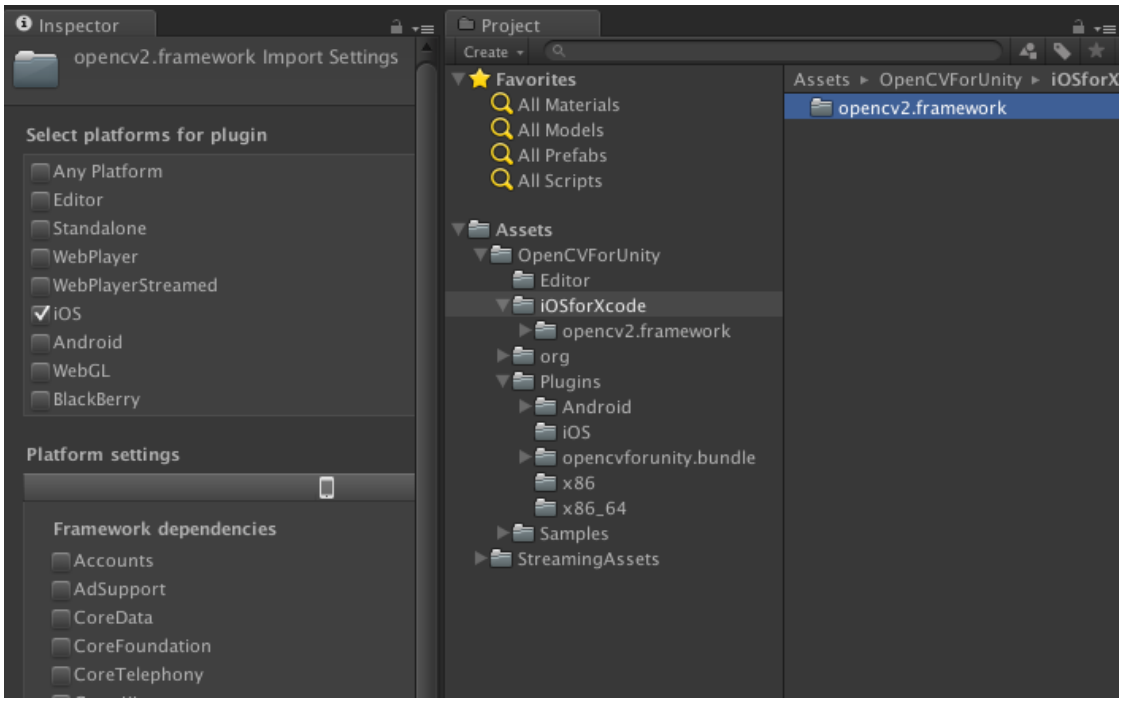


Unity5

- “OpenCVForUnity/Plugins/iOS/libopencvforunity.a” – Select platform iOS in Inspector.



- “OpenCVForUnity/iOSforXcode/opencv2.framework” – Select platform iOS in Inspector.



- Put the file that you want to use for Utils.getFilePath() in the “Aseets/StreamingAssets/”folder. (haarcascade_frontalface_alt.xml etc is for OpenCVForUnitySample.scene. Please copy only when necessary.)

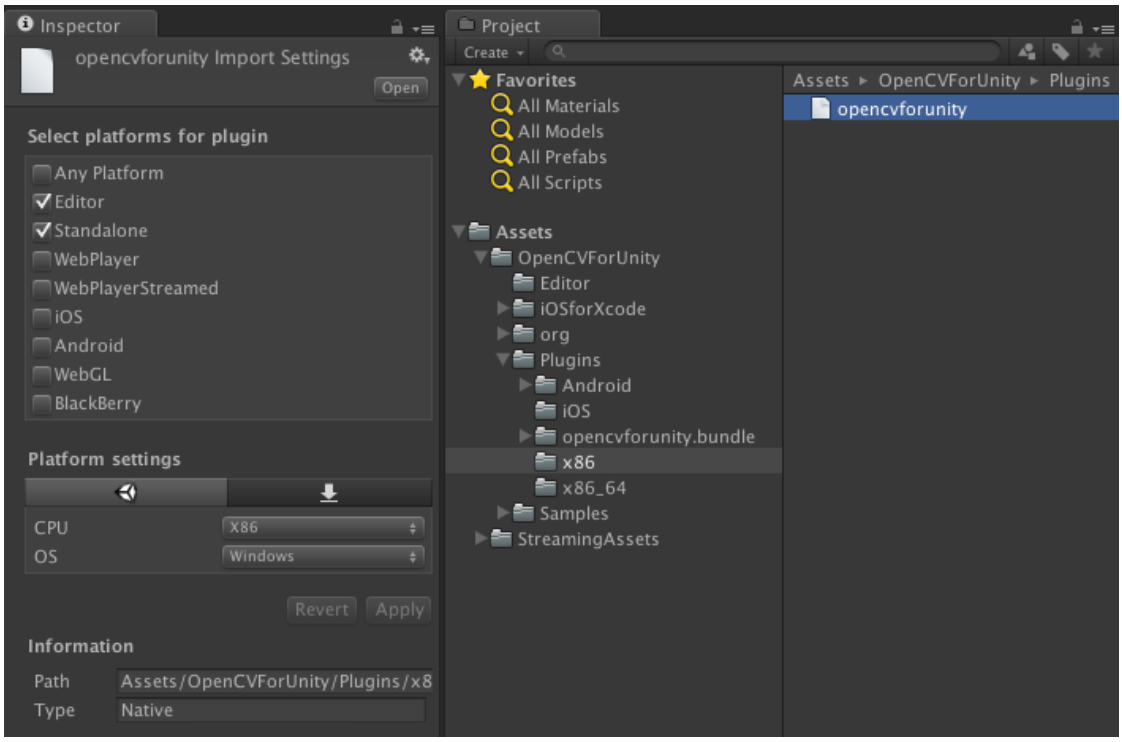
Win Standalone Setup Procedure

Unity4

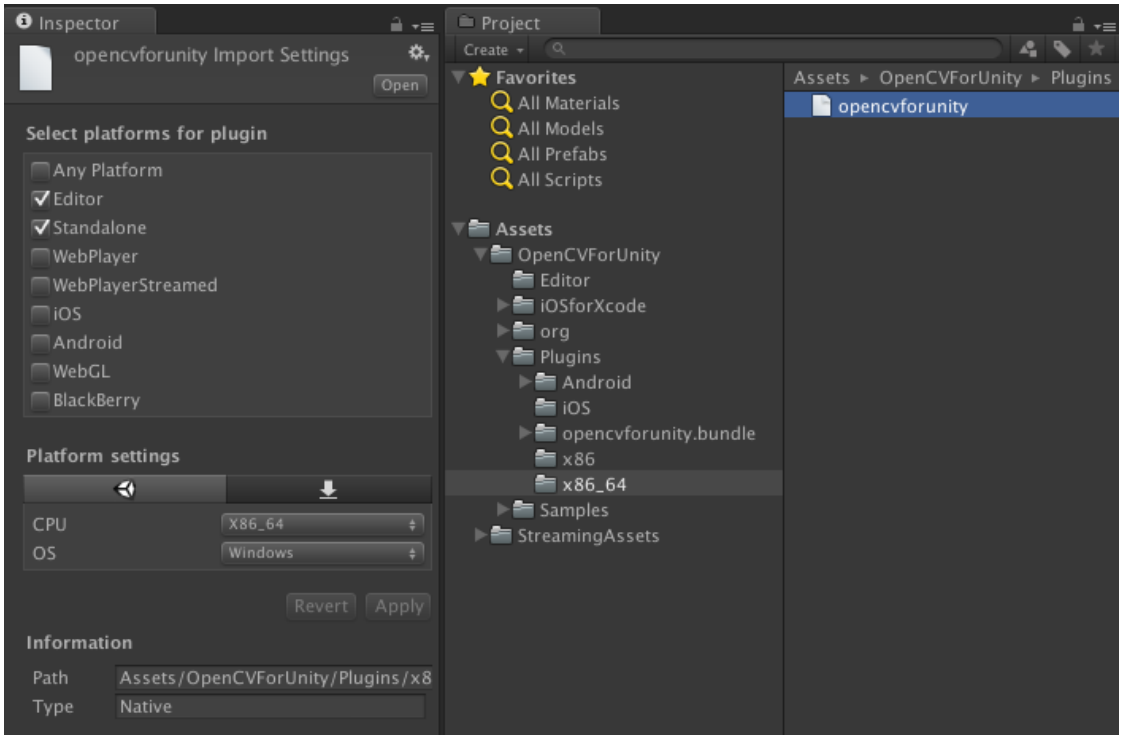
- Copy from “OpenCVForUnity/Plugins/x86/” to “Assets/Plugins/x86/” folder.
- Copy from “OpenCVForUnity/Plugins/x86_64/” to “Assets/Plugins/x86_64/” folder.

Unity5

- “OpenCVForUnity/Plugins/x86/opencvforunity.dll” – Select platform Editor,Standalone and CPU x86 and OS Windows in Inspector.



- “OpenCVForUnity/Plugins/x86_64/opencvforunity.dll” – Select platform Editor,Standalone and CPU x86_64 and OS Windows in Inspector.



- Put the file that you want to use for Utils.getFilePath() in the “Aseets/StreamingAssets/”. (haarcascade_frontalface_alt.xml etc is for OpenCVForUnitySample.scene. Please copy only when necessary.)

- If you use the “VideoCapture(string filename)”, require setup.
  1)Download "OpenCV for Windows Version 2.4.11"(http://opencv.org/downloads.html).
  2)Set Path to "opencv_ffmpeg2411.dll"
  if 32bit, "C:¥opencv¥build¥x86¥vc10¥bin¥".
  if 64bit, "C:¥opencv¥build¥x64¥vc10¥bin¥".

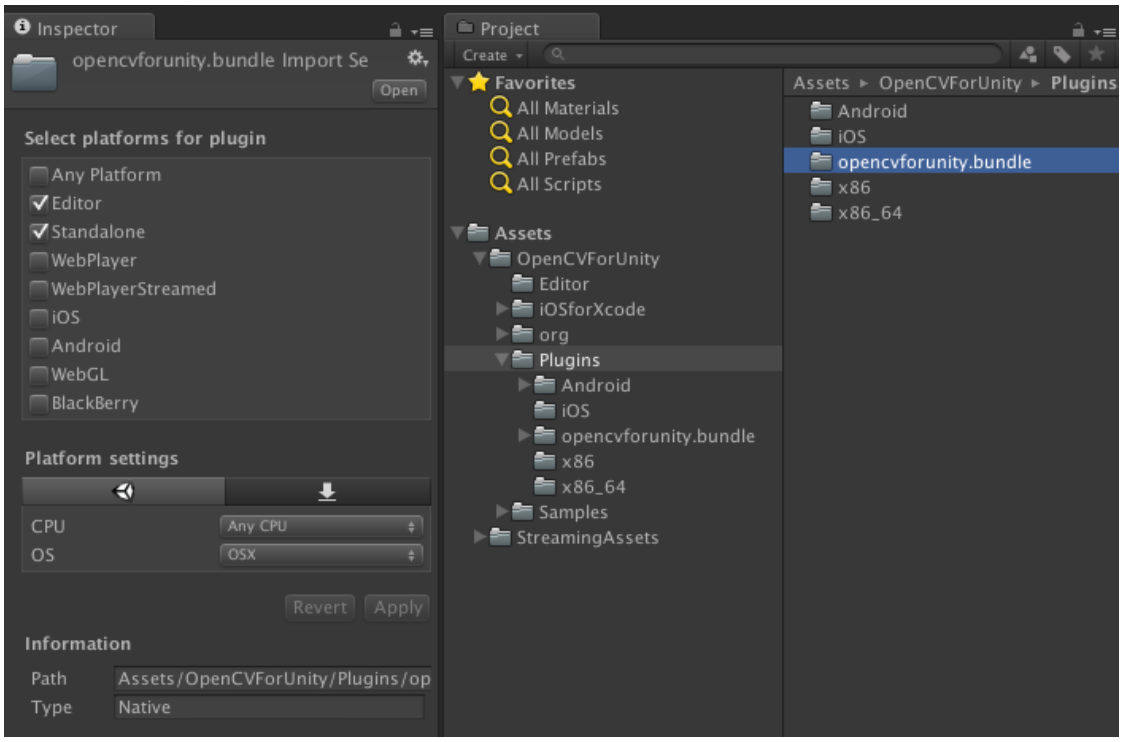
Mac Standalone Setup Procedure

Unity4

- Copy from “OpenCVForUnity/Plugins/opencvforunity.bundle” to “Assets/Plugins/” folder.

Unity5

- “OpenCVForUnity/Plugins/opencvforunity.bundle” – Select platform Editor,Standalone and CPU x86_64 and OS OSX in Inspector.



- Put the file that you want to use for Utils.getFilePath() in the “Aseets/StreamingAssets/”. (haarcascade_frontalface_alt.xml etc is for OpenCVForUnitySample.scene. Please copy only when necessary.)

Q & A

Q1.

"DllNotFoundException: opencvforunity" is displayed on the console when run the sample scene.

A1.

Plugin does not seem to be loaded correctly. Please check the setup procedure.

Q2.

"ArgumentException: The output Mat object has to be of the same size" is displayed on the console when run the sample scene.

A2.

After having set up Plugin, Plugin may work well when you reboot Unity.

Q3.

"Level 'Texture2DtoMatSample' (-1) could not be loaded because it has not been added to the build settings." is displayed on the console when run the sample scene.

A3.

Please Add all of the "***.unity" in the "OpenCVForUnity" folder to [Build Settings] – [Scene In Build].

Q4.

In DetectFaceSample or WebCamTextureDetectFaceSample, red rectangle is not displayed around face.

A4.

you might have failed to read the "haarcascade_frontalface_alt.xml".Please confirm whether there is "OpenCVForUnity/StreamingAssets"folder at the right position.

Q5.

Support Web platform?

A5.

Since the Unity Web Player does not support the native plugin, "OpenCV for Unity" does not support "WebPlayer Platform".

Q6.

Support WindowsStoreApps8.1 & WindowsPhone8.1.

A6.

If you want to try the Beta Version of “OpenCV for Untiy” based on “OpenCV3.0.0”(Support WindowsStoreApps8.1 & WindowsPhone8.1)

, unzip the OpenCVForUntiy3.0.0-beta.zip, please replace the “OpenCVForUnity” folder.“OpenCV for Untiy” based on “OpenCV3.0.0” support Unity5.not support Unity4.

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