# RealToon

V4.0.3


# User Guide

(V5)

***(RealToon Shader)***

***It's an AAA Anime - Toon Shader/Cel Shading Shader for Unity3D.***

***The goal/aim of this shader is to make your characters, objects or environment shading to look as close to anime or cartoon as possible in real-time and fast.***

***Use RealToon Shader for games, animations & illustrations/art.***

# [Table of Contents]

# [Shaders]

**A. Types:**

**a. Outline**
**Shaders with outline.*

**b. No Outline**
**Shaders without outline.*

**c. Tessellation**
**RealToon Tessellation version shader.*

**B. Shaders:**

**a. Default –** Default/Normal RealToon Shader
**b. Cutout –** RealToon Shader with cutout.
**c. Fade Transparency (No outline only) -** RealToon Shader with fade or smooth transparency.
**d. Refraction (No outline only) -** RealToon Refraction Shader.

**C. Effects:**

**a. Sobel Outline –** An edge detection or outline image effects.

# [How to use RealToon]

**A.** Use RealToon:

a. Create a material
b. Select the material you've created and change the shader to RealToon shaders you want to use.
c. Drag the material to your object.
d. Adjust the **Self Shadow Size** if needed to hide Receive Shadow weird edge.
e. Adjust **Intensity Multiplier** or **Source Color** at the **Lighting Panel** to reveal the color or texture on the shadow side.
f. Adjust your **Light Source** to balance the light.

**B.** Use RealToon Effects:

a. Select a camera.
b. Add component "RealToon > Effects".
c. Select the effect/s you want to use.

**C.** Use Frame By Frame Rendering:

a. Select a camera or object.
b. Add component "RealToon > Video – Image".
c. Select the type of Frame By Frame Rendering you want to use.

**[Important Notes/Tips]**

* If you want high performance game, Change ***Shadow Type*** to ***Soft Shadow*** or ***Hard Shadow***, Change ***Shadow Resolution*** to ***Low*** for softer ***Received Shadows*** or just change ***Shadow Type*** to ***No Shadow*** and use ***Self Shadow*** instead,
- Or do your own high performance settings/preference.

*For Best Anime/Toon Look (For Animations & Illustrations/Arts), Adjust Light ***Bias*** to 0.01, Change ***Shadow Type*** to ***Hard Shadows*** *and* change ***Shadow Resolution*** to ***High*** or ***Very High Resolution.***
Change also ***Shadow Projection*** to ***Close Fit***, ***Shadow Cascade*** to ***Four Cascades*** and adjust ***Cascade Splits*** until you get the highest quality shadow**. (**Edit-> Project Settings -> Quality**)**.

* Don't adjust ***Self Shadow Size*** beyond *0.56* if ***Received Shadows*** is turned on in your object because ***Received Shadows*** weird edge will be visible.

*You can use ***Directional Light*** as ambient light by checking ***Directional Light Affect Shadow****.*

*If you want your low poly objects or character to high poly and smooth,
Use ***RealToon Tessellation Version***.
- Note that tessellation only works on ***DX11/12*** to up***, OpenGL Core, OpenGL ES 3.1 mobile*** & ***PS4/XBoxOne*** and ***Shader Model 4.6*** to up.

*You can use ***Self Lit*** for object emission/self illumination, can also use it with post processing/image effects ***Bloom***.
- You can also use ***Self Lit*** as Unlit.

*Use ***Override Color*** to color shadow if you don't want to color the shadow using texture.

*RealToon now comes with ***Frame By Frame Rendering for*** Animation/Illustation use.
- A simple scripts to render each frame into PNG File.
- Just like tradition animation frame by frame workflow.

*RealToon can now receive GI & Sky light/Environment Lighting.
- If you want your object/character to receive GI Lighting, Use Light Probe.
- If you want your object to have real-time reflection, Use Reflection Probe.

*RealToon is now supporting Nintendo Switch,
Xbox One & PS4 is already supported but these two console needs to be tested first to know if its fully working or not.

# [RealToon Shader Controls & Functions]

**["*D:*" means Default Values/Settings]**

A. **Double Sided** *(D: Off)* – Can see the other side of a plane or face.

B. **Texture Color –** Texture and Color of the object.

   a. **Texture/Main texture** *(D: No Texture)* **–** The main/base texture of your object.
   b. **Texture Intensity (Refraction shader only)** *(D: 0)* - Intensity of the texture.
   c. **Main Color** *(D*: *Gray/ RGB:200 )* **–** The main/base color of your object.

      **Adjust **Main Color** to something gray if you want to blend the object to other objects uses **Unity Standard shader** or if it's too bright/over-expose, just like other toon shader.*
      **Use pure white color (RGB:255) if you only use one light and the **light intensity** is between 1 – 0.*

   d. **Vertex Colors Intensity** *(D: 0)* **–** The intensity of the objects vertex color.
   e. **Transparent** *(D: Unchecked)* **–** Enable texture transparent. (If your texture has transparent/alpha).
   f. **Texture Pattern Style** *(D: Unchecked)* **–** Turn main/base texture into pattern style.

C. **Cutout (Cutout shader only) –** Cutout transparent.

   a. **Cutout** *(D: 0)* **-** The amount of cutouts.
   b. **Alpha Base Cutout** *(D: Checked)* **–** If checked, Will use texture/main texture transparent/alpha but if unchecked it will use the color/s of the texture/main texture.
   c. **Use Secondary Cutout Only** *(D: Unchecked):* This will use the Secondary Cutout only.
   d. **Secondary Cutout** *(D: No Texture)* – A secondary Cutout.

D. **Transparency (Fade Transparency shader only) –** Transparency/Opacity of the object.

   a. **Opacity** *(D: 1)* **–** The opacity/transparency of the object.
   b. **Affect Shadow**
   c. **Mask Transparency** *(D: No Texture)* **–** Mask the part of the object you want to be affected by the transparency.

      **Use pure-strong black & white or texture with alpha/transparent.*
      **Black means affected, White means not affected***.**

**E. Refraction (Refraction shader only)**

a. **Intensity** *(D: 1)* **–** Strength of refraction.
b. **Main Color Affect Texture** *(D:Unchecked)*
c. **Texture Intensity** *(D: 0)*

**F. Color Adjustment**

a. **Saturation** *(D: 1)* **–** Color intensity/vibrancy.

**G. Outline (Outline Shader only)**

a. **Width** *(D: 0.5)* **–** Thickness/Width of the outline.
b. **Width Control** *(D: No Texture)* **–** *Controls the amount of outline and outline width.*

*****White means 1 or greater, black means 0.*

c. **Enable Outline Offset** *(D:Unchecked)*
d. **Outline Offset (***D: XYZ:0)- Change outline position.*
e. **Color** *(D: Black)* **-** Outline Color.
f. **Noise Intensity** *(D: 0)* **–** Noisiness/Distortion of the outline.
g. **Dynamic Noise Outline** *(D: Unchecked)* **–** Enable moving distorted/noisy outline.

**If checked, noisy outline will move like animated sketched drawing.*

**H. Self Lit/Self Illumination –** Objects own light/light of its own.

a. **Intensity** *(D: 0)* **–** The amount of its own light.
b. **Power** *(D: 1)* **–** Objects light strength.
c. **Color** *(D: White)* **–** Objects light color.
d. **High Contrast** *(D: Checked)* **–** Use high contrast color.
e. **Mask Self Lit** *(D: No Texture)* **–** Mask self lit.

**Use pure-strong black & white or texture with alpha/transparent.*
**White means affected, Black means affected.*

**I. Gloss -** Glossy effect.

a. **Intensity** *(D: 0)* **–** Gloss strength.

**The reason why you can make the value to high is to remain/maintain gloss in low light just like anime or cartoon.*

b. **Glossiness** *(D: 0.5)*
c. **Color** *(D: White)* **–** Gloss color.

d. **Main Texture Color Gloss** *(D: Unchecked)* - Use Texture/Main Texture to color gloss.

**If checked, it will use the main texture to color instead the color you choose.*

e. **Soft Gloss** *(D: Unchecked)* **–** Soft type gloss.

**if checked, It will turn hard gloss to soft type gloss.*

f. **Gloss Mask** *(D: No Texture)* **-** Mask gloss.

**Use pure-strong black & white or texture with alpha/transparent.*
**White means visible, Black means not visible.*

J. **Gloss Texture –** Gloss in texture form/custom gloss.

a. **Intensity** *(D: 0)* **–** Gloss Texture Intensity/strength.

*******You can blend the Gloss Texture to Normal Gloss by adjusting this.*

b. **Gloss Texture** *(D: No Texture)* **–** Texture to use as gloss.

***(Recommend):*** *Use pure-strong black & white texture or texture with alpha/transparent and square size.*
** You can also use colored texture but it will automatically turn it to black & white but not strong & pure which is not good.*

c. **Rotate** *(D: 0) – Rotate Gloss Texture.*

**Adjust Gloss Texture Offset while adjusting this.*

d. **Follow Object Rotation** *(D: Unchecked)* **–** Gloss Texture follow object rotation.
e. **Follow Light** *(D: Unchecked) – Gloss Texture follow light.*

f. **Shadow Mask Gloss Texture** *(D: Checked)* **–** Shadow mask Gloss Texture.

**K. Shadow –** Shadows on the object.

**a. Override Color** *(D: White)* **–** Override shadow color.

**Use this to color shadow and if you don't want to use **Shadow Color Texture**.*
** Choose color between white & the color you want if you are using Point & Spotlight.*
**The light side of the object will always be affected (Only applies to Point & Spotlight).*
**Increase **Adjust Light (Point & Spotlight)** to maintain object main color & main texture color (Only Applies to Point & Spotlight).*
** It will work 100% in Directional Light, but in point & spotlight 20% to 50% working for some reasons.*

**b. Add light** *(D: 1)* **–** Add light to shadow.

**The Light side of the object will always be affected (Only applies to Point & Spotlight).*
**Decrease **Adjust Light (Point & Spotlight)** to maintain object **Main Color** & **Main Texture** color (Only applies to Point & Spotlight).*

***Note:***
***Add Light** will only take effect if **Environment Lighting** -> **Intensity Multiplier** is not equal to 1 or **Source Color** is not black (RGB:0) or **Directional Light Affect Shadow** is checked or enabled.*

**c. Adjust Light (Point & Spotlight)** *(D: 1)* **–** Adjust point & spotlight light intensity.
**d. Saturation (Point & Spotlight)** *(D: 1)* **-** Point & Spotlight color intensity/vibrancy.
**e. Adjust Light (Directional Light)** *(D: 1)* **–** Adjust directional light intensity.

**f. Light Intensity Affect [OC – AL – CT – PT] (Directional Light)** *(D: Unchecked) - Light Intensity affect **Override Color, Add Light, Shadow Color Texture** & **PTexture**.*

***Note:** If this checked, ***Override Color, Add Light, Shadow Color Texture** & **PTexture** will be disabled in Point & Spotlight.*
** This is useful if Point & Spotlight is only use as extra lights.*
** Use this if you want **Override Color, Add Light, Shadow Color Texture** & **PTexture** to be affected by Intensity Light.*

**L. Self Shadow –** Object's own shadow.

**a. Intensity** *(D: 1)* **-** Self Shadow intensity/strength.
**b. Color –** Self Shadow Color.

**Useful if **Received Shadows** turned off.*

c. **Size** *(D: 0.56)* **–** The amount of self shadow on the object.

**Don't adjust this beyond 0.56 if **Received Shadows** is on in your object because **Received Shadows** weird edge, visible.*

d. **Hardness** *(D: 1)* **–** Self shadow hard edge or soft.

e. **Self Shadow at View Direction** *(D: Unchecked)* **–** Self shadow use your view direction.

*******If checked, self shadow use your view direction, if uncheck it will use the default light direction.*

**M. Shadow Color Texture –** Shadow color in texture form.

a. **Intensity** *(D: 0) – Shadow color texture intensity.*

**Should be the same as the main texture but dark color/darker version*
*Just like the anime/cartoons.*

b. **Shadow Color Texture (***D: No texture)* – Shadow color in texture or shadow/darker version of the main texture.

c. **Power** *(D: 0)* **–** Color strength/contrast of the texture.

**If Increase, texture color will become strong and darker.*

***(Note)***
***Adjust Light (Point & Spotlight)** needs to be increase/balance when using **Shadow Color Texture**. (Only applies to Point & Spotlight).*

**N. ShadowT –** Texture based shadow. **(Uses Texture/2D Texture)**

a. **Intensity** *(D: 0)* **–** ShadowT intensity/strength.
b. **Texture** *(D: No Texture)* **–** Flat or Gradient Dark Gray & White Texture to be use as shadow.

***(Recommend):** Use dark gray & white texture or texture with alpha/transparent.*
*Use pure/deep black & white texture if you don't want ShadowT to be affected by **Light Size**, **Shadow Size** & **Light Falloff**.*

c. **Color** *(D: Black)* **–** ShadowT Color.
d. **Light Size** *(D: 0.5)* **–** The amount of light.

***High values lighter, Low values less light.*

e. **Shadow Size** *(D: 0)* **–** The amount of shadow.

**Low values less shadow, high values more shadow.*

f. **On Light** *(D: Checked)* **–** ShadowT visible on light/light source.
g. **On Self Shadow** *(D: Unchecked)* **–** ShadowT visible on shadow.

**** Note: On Self Shadow** takes effect only if **Self Shadow Intensity** is less than 1.*

h. **Light Falloff Affect ShadowT** *(D: Unchecked)* **–** Light Falloff Affect ShadowT.

O. **Shadow PTexture** *(D: No Texture)* **–** Texture to use as pattern style shadow.

a. **Intensity** *(D: 0) – Shadow* PTexture Intensity.
b. **Shadow PTexture** *(D: No Texture)* **–** Texture to use as patterned shadow.
c. **Power** *(D: 1)* - Strength/contrast of the texture.

***Note:** PTextures/Pattern Texture - use for turning shadow to pattern style shadow like manga "Half Tone" or any texture with/without alpha/transparent.*

P. **Lighting -** GI Lighting, Light-Falloff & Other lightings.

a. **Use GI Lighting** *(D: Checked)*

**If unchecked, will use legacy/old unity's ambient light color.*

b. **GI Flat Shade** *(D: Unchecked)* **–** Use hard edge or flat shade GI.
c. **GI Shade Size** *(D: 0)* **–** Amount of shade.

**Similar to **Self Shadow Size.***

d. **Directional Light Affect Shadow** *(D: Unchecked)* **-** Directional Light affect Shadow.

**Use this if you want directional light to act as ambient light.*

e. **Enable Light Falloff** *(D: Checked)* **-** Enable Point/Spot light falloff.

**If unchecked, light-off will be turned into flat or hard-edge and if you want soft shadow at low resolution shadow to turned hard-edge.*

**Q. Custom Light Direction**

a. **Intensity** *(D: 0)*
b. **Customer Light Direction** *(D: XY:0 Z:10)*
c. **Follow Object Rotation** *(D: Checked)* - **Customer Light Direction** follow object rotation.

***Note:** This only affects **Self Shadow** & **ShadowT.***
**Use this if you don't want **Self Shadow** & **ShadowT** to follow Light too much or you want **Self Shadow** & **ShadowT** to follow other object by script.*
**Useful in anime face.*

**R. Reflection**

a. **Intensity** *(D: 0)* **–** Reflection intensity/strength.
b. **Default Reflection Roughness** *(D: 0)*
c. **Reflection Blend To Main Texture** *(D: Unchecked)* **-** Blends Reflection to Main Texture, gloss, shadows and other features.

d. **Mask Reflection** *(D: No Texture)* **–** Mask Reflection.

**Use pure-strong black & white or texture with alpha/transparent.*
**White means affected, Black mean affected.*

**S. FReflection** – Fake Reflection **(Not Real-time, Not Cube map, Uses Texture/2D Texture).**

a. **Use FReflection** *(D: Unchecked)*

b. **FReflection/FReflection Texture** *(D: No Texture)* **–** Texture to use as reflection.
**Use square/equal sides size texture or panorama image/picture.*
*Be sure to use the Tilling & Offset to adjust its position and size.*

**__FRelfection__ is only visible when there is light/light source.*
**Always visible in light.*
**Will be visible in dark area/parts if **Self Shadow** & **ShadowT** is 0 and **Received Shadows** turned off.*

**T. Fresnel –** Fresnel Effect.

a. **Intensity** *(D: 0)* - Fresnel intensity/strength.
b. **Color** *(D: White)* - Fresnel Color.
c. **Fill** *(D: 1)* **–** The amount of Fresnel on the object.
d. **Hard Edge** *(D: Unchecked)* **–** Turn Fresnel into hard edge Fresnel.
e. **On Light** *(D: Checked)* - Fresnel visible on light.
f. **On Shadow/Dark** *(D: Unchecked)* **–** Fresnel visible on shadow/dark.

**U. Depth (Refraction Shader Only) –** Depth Effect.

a. **Intensity** *(D: 0)* **–** Depth intensity/strength.
b. **Color** *(D: White)* – Depth color.
c. **Color Intensity** *(D: 1.8)* – Color intensity/strength.
d. **Hardness** *(D: 0.1)* **–** Depth hardness.

**V. Tessellation (RealToon Tessellation Version Shader only)**

a. **Smoothness** *(D: 0.5)*
b. **Transition** *(D: 0.8)* **–** The amount of transition between **Near** & **Far**.
c. **Near** *(D: 1)* **–** The amount of tessellation in near view.
d. **Far** *(D: 1)* **–** The amount of tessellation in far view.

**W. See Through**

a. **ID** *(D: 0) – ID or Reference value.*
b. **Set 1 & Set 2** *(D: None)*

***[Note]***
**"**A**" the see through object.*
**"**B**" the object to be seen through "**A**".*

**If **Set 1** is set to **A**, **Set 2** is also set to **A**. **(See through object)***
**If **Set 1** is set to **B**, **Set 2** is also set to **B**. **(Object to be seen through "A")***
**If the **ID** of the see through object **"A"** is set to **1**, the **ID** of the object to be seen through **"A"** is also set to **1**.*

***[Important)***
***[See through object "A"] Render Queue** set to AlphaTest (2450).*
***["B" object to be seen through "A"] Render Queue** set to AlphaTest (2450) and minus 1.*
***(See/open scene "See Through Example" for more info)***

# [Frame By Frame Rendering Tool]

*"Frame by Frame Rendering is a simple tool to render each frame to PNG File. (Use For Animation & Illustration/Art)"*

Two types of Frame By Frame Rendering script:

1. **Frame by Frame Rendering (Default) –** Auto Render by Start Frame.
2. **Frame By Frame Rendering (Manual) –** Manual Render.

## (Controls & Function)

***Frame By Frame Rendering (Default)***

A. **Settings**

a. **Path Folder** *(D: Rendered Files)* – A path/location to where to save the PNG Files.

**You can put name folder only but it will be created into your Unity3D root project folder.*
*If you want to save the files to different location/drive, include "DriveLetter:\", example "C:\PNGFiles"
** This will set to **"Rendered Files"** if this set to empty.*

**b. PNG File Name** *(D: Frame)*

** This will set to **"Frame"** if this set to empty.*

**c. Frame Rate** *(D:24)*
d. **Start Frame** *(D:0):* Frame Number to start render.
e. **End Frame** *(D:0):* Frame Number to end render.
f. **Single Frame Rendering Mode** *(D: Unchecked)* – Render single image only.

**This will ignore **Frame Rate**, **Start Frame** & **End Frame**.*
**It will only render **Frame 1**.*
**If Checked/Enabled file name will be named "YouFileName Hour_Min_Sec".*
**If Uncheck/Disable file name will be named "YouFileName FrameNumber".*

**B. Information –** This section will only display information about the rendering and operations.

a. **Current Frame –** Display the current frame.
b. **Info –** Display rendering info and operations.

***Frame By Frame Rendering (Manual)***

a. **Frame Number** *(D: 0)* – Frame number to be render.
b. **Render** *(D: 0)* – To render or Start Render.

**A .Settings**

c. **Path Folder** *(D: Rendered Files)* **–** A path/location to where to save the PNG Files.

**You can put name folder only but it will be created into your Unity3D root project folder.*
*If you want to save the files to different location/drive, include "DriveLetter:\", example "C:\PNGFiles"
** This will set to **"Rendered Files"** if this set to empty.*

**d. PNG File Name** *(D: Frame)*

** This will set to **"Frame"** if this set to empty.*

e. **Picture Mode** *(D: Unchecked)* – Render single image only.

**If Checked/Enabled file name will be named "YouFileName Hour_Min_Sec".*
**If Uncheck/Disable file name will be name "YouFileName FrameNumber".*

**B. Information –** This section will only display information about the rendering and operations.

a. **Last Rendered Frame –** Display the last rendered frame.
b. **Info –** Display rendering info and operations.

# (Frame By Frame Rendering Notes/Tips)

***For Frame By Frame Rendering Both (Default & Manual)***

1. You can pause rendering by click pause button.

2. Stop render immediately by click play button again.

3. You cannot start render if the folder has files on it so you need to change the **Path Folder** to another location or folder. (Applies only to **Non Picture Mode** & **Single Frame Mode**)

4. You can start render even if the folder has files on it. (Applies only to **Picture Mode** & **Single Frame Mode**)

5. You can create folder by just putting a folder name that is not yet exist in the current location/path. (Applies to **Path Folder**)

6. To set the resolution just set it in the Game view or Game panel.

***For Frame By Frame Rendering (Manual)***

1. Click **Render** to start render, once clicked it will turn back to unchecked means render 1 frame not continuous unlike **Frame By Frame Rendering (Default)**.

2. You can overwrite a specific saved frame by setting the **Frame Number** to the frame number you want to overwrite then click **Render**. Be sure that frame number is in the folder. Be careful not to double the **Render** or else it will overwrite the next frame number that is already saved.

***For Frame By Frame Rendering (Default)***

1. Click play button to start render, once the button is clicked **Current Frame** will start moving or display the current frame once the **Current Frame** reached the **Start Frame** number it will start rendering then later if **Current Frame** reached the **Start Frame** number it will stop render. To completely end rendering click play button.

2. If you render a scene with timeline, set **Frame Rate** to the frame rate of timeline. *Example "Timeline frame rate is 60 = Frame By Frame Rendering (Default) Frame rate is also 60"*. If the two is not equal the output is not synchronized especially if you edit it in your Video Editor Software or Compositor Software.

## (For Importing PNG files to your Video Editor or Compositing Software)

1. Import PNG files as **PNG Sequence** or **Image Sequence**, be sure your video editor or compositing software has this features or option. Be sure PNG files are numbered frames like *"Frame 0002 to Frame 9000 or higher".*

2. Change the imported **PNG Sequence** or **Image Sequence** file frame rate to the frame rate you set in your **Frame by Frame Rendering** Settings.

# [Notes & Tips]

**A.** You can control the properties of the shaders in your code.
To see/access the shader properties, just go to **RealToon Shaders** folder and select the shader you want to access.

If you want to know how to access shader properties by code, just go to unity3d manual script.

**B.** Use **No Outline** - **RealToon** shaders if your object/s don't need outline or if you don't want to use outline and want less draw calls or want to use a 3rd party image effects outline.

**C.** Note that tessellation only work on **DX11/12** to up**, OpenGL Core, OpenGL ES 3.1 mobile** & **PS4/XBoxOne** and **Shader Model 4.6** to up.

**D.** You can now use RealToon together with Unity3D Standard Shader.

**E.** RealToon can now receive GI, skylight/environment light & can do baked/real-time reflection.

**F.** Note that **Shadow Color Texture** should be the same as the main texture but dark color/darker version just like anime/cartoons.

**G.** In Point & Spotlight, **Adjust Light (Point & Spotlight)** needs to be adjust/balance when using **Override Color**,**Add Light**, **Shadow Color Texture** and **Shadow PTexture**.

**H.** You can use ShadowT as 2nd self shadow/shade or as self shadow/shade.

**I.** Be sure your Point & Spotlight is bright when using **Shadow Color Texture**, **Shadow PTexture** and **Override Color**.

**J.** You can use both use Directional Light & Point - Spotlight at the same time.

**K.** Colors in Point & Spotlight/ForwardAdd is abit saturated when using **Shadow Color Texture + Add Light** but you can tweak this by adjusting **Saturation (Point & Spotlight)**.
There are reasons and explanation why.

**L.** You can use **Fresnel** as rim light for anime or toon looks.
Just enable **Hard Edge** and adjust **Fill**.

**M.** If you want a manga/comics looks, just set the color saturation to 0 or make your texture black and white and use **Shadow PTexture**.

**N.** **Fade Transparency & Refraction** doesn't receive shadows and don't have outline for some reason.

**O.** If you want to just change the color of the shadow and don't want to use **Shadow Color Texture**, Use **Override Color**, it will work 100% in Directional Light, but in point & spotlight 20% to 50% working for some reasons.

**P.** Make your normal map smooth for better shading details.

**Q.** Use **ShadowT** for more detailed shadows like the shadows on a cloth or hair.

**R.** For better anime/toon shadow/shading, edit the Vertex Normal of your model by editing it to your 3d modeling software.

**S.** Use **Custom Light Direction** if you don't Self Shadow & ShadowT to not follow Light Direction or blend the two Custom Light Direction & Light Direction. Useful for anime faces.

**T.** Use **Outline Offset** if you want to adjust the outline position or want a silhouette outline effect.

**U.** Contact me if you want to translate this User Guide in your local language, see page 15 for contact details.

**V.** Image Gallery:
http://mjq3690.deviantart.com/gallery/61884975/RealToon-Shader-Gallery

**W.** Video Tutorials:
https://www.youtube.com/playlist?list=PL0M1m9smMVPJ4qEkJnZObqJE5mU9uz6SY

**X.** Video Demo:
https://www.youtube.com/playlist?list=PL0M1m9smMVPI1XRV_1UL_Vz3IAHkPtQYT

**Y.** Other Videos
https://www.youtube.com/playlist?list=PL0M1m9smMVPK_vLCBnJ8qIc3w5WsHrCM5

**Z.** RealToon Tutorials|Tips (Image Version) *You can also download these images*:
https://app.box.com/s/un0rga6boorbo90dkvadygsolzhuorgk

# [Contact/Support/Social Network]

Facebook Page:
https://www.facebook.com/mjqstudioworks/

Twitter:
https://twitter.com/mjqstudioworks

Youtube:
https://www.youtube.com/channel/UC5sHbeOQdyMPV_Ck0kRgJgQ

MJQ Studio Works Unity Publisher Profile (Support Links & Email):
http://u3d.as/vDv

Unity 3D Forum:
https://forum.unity3d.com/threads/realtoon-pc-mobile.414237/

Website:
https://mjqstudioworks.weebly.com/