

VRChat

 VRChat 

 VRChat 









 <https://steamcommunity.com/sharedfiles/filedetails/?id=2190684978>

 **Iconoclass**

 [The VRChat Creation Co... | VRCLibrary](#)





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 - [Blender](#)
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VRChat VRChat



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Unity 2019



Unity VRChat SDK "New User" VRChat Steam Oculus

Unity

Unity Hub **Unity VRChat** Unity

VRChat SDK

VRCS DK3

Blender 3D

Unity ☐

Unity Hub “ ” 3D VRChat








<https://www.youtube.com/embed/IIKaB1etrik?start=121>

GameObject Transform X Y Z



- ☐ Q ☐☐☐☐☐☐
- ☐ W ☐☐☐☐☐☐
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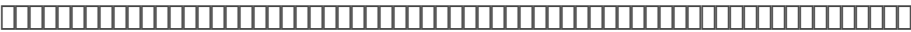


“ ck12.org ”

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Unity



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□□ Unity □□□□□□□□□□> □□> □□□□□□ Standard shader□□□□□□ (□PBR) □□□



□□□□□□ [PBR](#) □□□□□□□□□□ VRChat □□□□□□□□□□□□



https://www.youtube.com/embed/_LaVvGkBDs?start=57



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□□□ 2D □□□□□□□□□□

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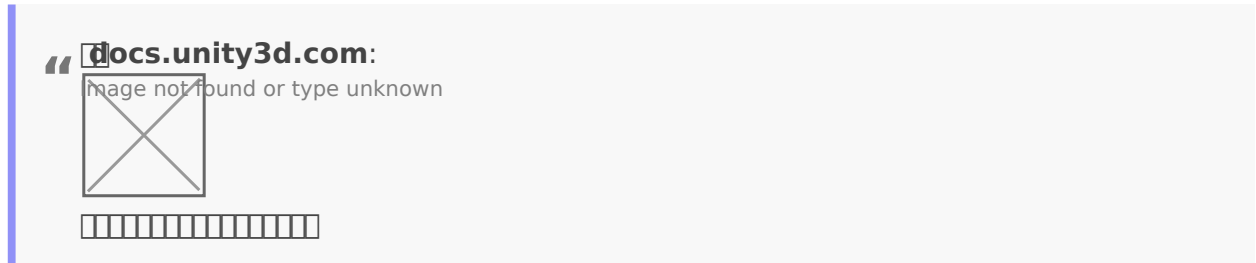
[Texels](#)□□□□□

[:](#)□□□□

Albedo map

Normal map

Texels 3D



Occlusion map Ambient Occlusion ,AO

Albedo

Smoothness map

Unity PBR

- [ORL's Shaders](#)
- [Silent Filamented](#)
- [Mochie standard](#)
- [z3y's shader](#)

Unity Standard shader

Metallic map

Specular Map

Specular

Emission map

Diffuse map

PBR Albedo Albedo

Spec PBR

UV UV mapping

2D

Wikipedia:
Image not found or type unknown

W X Y Z UV U V

Unity

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-
- Sprite- 3D 2D

SRGB

AO

Mipmap

BoxKaiser

MipMapping



VRChat VRChat



CPU

CATS Blender



Blender

[Quests](#)vrchat.com]


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VRChat

- ☐ Avatars
- ☐ Worlds

[illegible]

- Textures
- Models — 
- Prefabs
- Shaders





<https://ambientcg.com/>

Tab

GameObject

GameObject [] " " [] XYZ [] 0,0,0 [] XYZ [] 1,1,1 []

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Blender

30

Unity

Unity ☐ ☐ ☐ ☐ ☐

- <https://youtu.be/JDVuTBHnGWw>
- <https://youtu.be/IHeMmFxvmkY>
- <https://youtu.be/thA3zv0IoUM>

■■■■■■■■■■■■■■Unity■■■■



Blender

Unity 3D
Unity Probuilder

<https://www.youtube.com/embed/85Xu93bsN34>

https://www.youtube.com/embed/ebzGMqVg_h0



[Blender Basic Tutorials playlist](#) <---

<https://vrclibrary.com/wiki/books/maebbies-precise-solutions/page/blender-3-28x-mapping-config-for-mapping>



<https://youtu.be/eSiqYvDHppM>

<https://youtu.be/7DT0dtarYv4>

<https://youtu.be/7pZVngqwgDo>

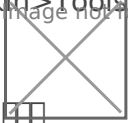

[.blend1](#)





<https://www.youtube.com/embed/bSwMz4WcajQ>

[Pumkin's Avatar Tools](#)[\[github.com\]](#)

1. VRCSdk Pumkin's Avatar Tools Unity Windows Unity VRChat > Tools > Pumkin's Avatar Tools
2. FBX
3. VRChat > Mobile > Toon Lit VRChat > Mobile > Standard Lit
- 4.
5. FBX "Rig" "Humanoid" " "
6. FBX " " " "
7. FBX " " " " 1
8. Pumkin > Tools > Avatar Tools. "Select from Scene" "Quick Setup Avatar". 
"Fill Eye Bones"
9. VRCSdk > Show Control Panel. "Build and Publish for Windows"
10.  (VRCCam).

Pumkin's tools /

" "

1. [EasyQuestSwitch](#)
2. [F2Quest](#)
3. [EasyQuestSwitch](#) [github.com]
4. [Quest VRChat/Toonlit](#)
5. [VRCSdk](#) "Switch Build Target to Android" (Unity)
6. [Pumkin's Avatar Tools](#) Dynamic Bones constraints

7. VRCS DK

8. VRCS DK Windows

Quest

<https://www.youtube.com/embed/8MkgXcidxg4>

Blender CATS "Bake" Quest Quest Quest



A horizontal timeline illustrating the evolution of the metaverse. The timeline is represented by a series of vertical bars, each containing a year. The years shown are 1989, 1994, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, and 2022. Key milestones are marked with text above the timeline: 'MMD' (Minecraft) is marked above 1999; '3D' is marked above 2003; and 'VRoid' is marked above 2021.

[VRoid Studio\[vroid.com\]](http://vroid.com) [VRM Converter for VRChat\[booth.pm\]](http://booth.pm)



MMD [|||||]

“MMD”☐☐☐☐

MMD MikuMikuDance MMD YouTube "MMD"

UV VRChat

||||| MMD ||||| Source Filmmaker ||| GMOD ||| Models

TTTTT MMD TTT

DeviantArt “ ” —

Nicovideo[3d.nicovideo.jp] - Kancolle

[illegible]

Google Chrome — Twitter Bow

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VRChat VRChat DMCA

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VRChat electrica2014 Cirno Google Twitter electrica2014
ZUN VRChat “cosplay” cospl
MMD MMD
Tupper - MMD
VRChat
Tupper
MMD

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[gitlab.com](#)]

[vrchat.fandom.com](#)]

CATS .blend “Fix Model” CATS Cust

Blender “” +

Blender

Ctrl+Z “”

Blender “” +

Unity

Blender “> > ..”



Twist Bones

Lip sync

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Eyetracking

[illegible]

Avatar 3.0

Unity SDK Examples3 vrc_AvatarV3HandsLayer.controller Ctrl+D

VRC Avatar Descriptor Playable Layers Customize FX Default Non-Transfo

Ctrl+6 Blendshapes

0 Ctrl+C 1 Ctrl+V

"Open" Motion

AV3 - 3 - Avatar 3.0

<https://www.youtube.com/embed/FtEpxOozwOI>

<https://www.youtube.com/embed/PXyXF9nH--Q>

<https://www.youtube.com/embed/2DFT0LsOalw>

https://www.youtube.com/embed/XqtSg6_W07Y

<https://www.youtube.com/embed/kNUNOrHmOrQ>



<https://www.youtube.com/embed/Np3StFeVmLk>

[VRChat](https://docs.vrchat.com/docs/requirements) controller

Blender rigify

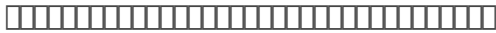
<https://www.youtube.com/embed/-gIL6VZ-bkE>

<https://www.youtube.com/embed/f2pTkW-1jkE>

mixamo.com

- Mixamo chat.fandom.com





<https://www.youtube.com/embed/dKZrzG5r13g>

<https://www.youtube.com/embed/zVIFbqQAYkk>



██████ DeviantArt ████████ "MMD██████"████

□□□□□□□□ CATS □□□□□□□□

VRChat



Blender 2.80 "Blender 2.80" 2D https://youtu.be/HPz5gk_AT6w https://youtu.be/7ULae_1GVpc https://youtu.be/7ULae_1GVpc



<https://www.youtube.com/embed/BqWYgrXw7Jk>

<https://www.youtube.com/embed/AcjGeo1x7rA>



☐ PBR ☐ Blender ☐ GIMP ☐ Photoshop ☐ MMD ☐

Substance Painter PBR ArmorPaint 16 Quixel Mi

<https://www.youtube.com/embed/FeJFg5ullrc>

Blender

Avatar 3.0

[AV3 - Avatars](#) [ask.vrchat.com]

VRChat

<https://www.youtube.com/embed/2sfTEBAI8sA>

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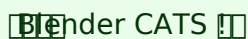
Rainhet Blender

(DATED, Avatars 2.0)

Avatars 2.0

VRCSdk CutsomOverrideEmpty ctrl+D CustomOverride F2

VRChat .anim



1. ☐ .jpg ☐ .png ☐
☐ Normal
2. ☐ crunch compression
3. ☐





CATS Optimization " "

<https://www.youtube.com/embed/YUZeBfYbfVo>



MMD VRChat CATS

Dynamic Bones

Dynamic Bone [Unity](#)

Oculus Quest Dynamic Bone

Dynamic Bone

Dynamic Bone Dynamic Bone

Dynamic Bone collider

Dynamic Bone 2



[Pun](#)kin's Avatar Tools.

" " " " " " Dynamic Bone 32 Dynamic Bone

Quest

Quest

Quest VRChat

- (CATS Matcombiner)
- **dynamic bone**
- **dynamic bone collider**
- **dynamic bone**
- **dynamic bone** (CATS !!!)
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Quest ☐ VRChat ☐ Standard Lite ☐ Toon lit☐ Quest ☐

Poiyomi's Silent's

Poiyomi

Silent [] [] [] [] [] [] []



Thickness map

SSS

Blender

ph. 01 year 11.51c S15ent Epon



<https://www.youtube.com/embed/JQyntL-Z5bM>

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□ 3D [deɪga.me/]

.blend
 Unity
 .fbx

Unit 2: Tower Studio's skyboxes [gitlab.com]

Pickupabble

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- VRChat GameObject VRCPickup

- $\square \square \square 1 \square \square \square$
- Capsule $\square 2 \square \square \square \square \square \square \square \square \square \square$
- Box $\square \square \square \square \square$



Unity Standard Assets [assetstore.unity.com]

<https://www.youtube.com/embed/SuUNnswH94>

<https://www.youtube.com/embed/bh9ArKrPY8w>

<https://www.youtube.com/embed/Nm2TsnKVGi8>

Unity ???

<https://www.youtube.com/embed/f4xikqJdkwM>

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<https://www.youtube.com/embed/r9l0jaRbL4o>

???????????????????? ???? 3D vrc_pickup

<https://www.youtube.com/embed/FEA1wTMJAR0>

?? [Udon prefabs section](#)[docs.google.com] of VRCPrefabs.??? [Vowgan's Collision Sounds](#)[vowgan.booth.pm], they are incredibly satisfying.



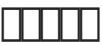
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<https://www.youtube.com/embed/uLi52YrrDmY>

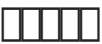
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<https://www.youtube.com/embed/1pNMo2UQY1o>



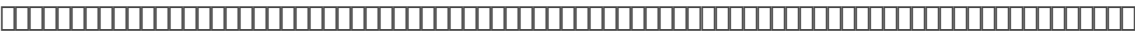
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VRChat[icon]



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[\[icon\]](#) [Reflection Probe Box Projection](#) [\[icon\]](#)



[icon] Window>Rendering>Lighting Settings[icon]>[icon]> [icon]





Texels [] PC [] 30 []
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[] UV [] " " " " UV " "

[] Unity [] PCSS []

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<https://unity3d.com/how-to/progressive-lightmapper-optimization-tips>

[] UV [] <https://unity3d.com/uk/espan> texel []

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????????[????????] Most scenes shouldn't need more than 2.\????????

Occlusion Culling

[docs.unity3d.com/]

????? GameObjects ??? static [???????occlusion ? occludee static ??? true] ?????
Windows>Rendering>Occlusion Culling???????????? bake?

Unity [] VRChat []



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<https://www.youtube.com/embed/RwlnCn2EB9o>

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<https://www.youtube.com/embed/MMggqenxuZc>

<https://www.youtube.com/embed/NGsfEVDsSSI>

<https://www.youtube.com/embed/TX58AbJq-xo>

<https://www.youtube.com/embed/yY96hTb8Wgl>

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VRChat "Walkthrough "

{ [https://www.youtube.com/watch?v=...](#)



Particles [\[docs.unity3d.com/\]](https://docs.unity3d.com/)

<https://www.youtube.com/embed/FEA1wTMJAR0>

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VRWorldToolkit

[Silent](#)

*** Moochie SSR VR !!

** VR

EV

EV -0.7 EV 0.7 0.7

https://www.youtube.com/embed/_PzYAbPpK8k



[Audio](https://docs.unity3d.com/2018.4/Documentation/Manual/AudioOverview.html)

\\[docs.unity3d.com\\]

?????? GameObject ????? VRC Spatial Audio Source ??????????????????

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???????????????????? Vorbis???????????????????? ????????????????? "????????"?

[Audio-basics-crash-course](#)_[ask.vrchat.com]



Udon

<https://www.youtube.com/embed/i-lAiYnBcOA>

Udon VRChat C#UdonSharp[github.com] Udon?[ask.vrchat.com/]VRChat Udon



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Unity C# Brackeys
Unity C# YT



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C# ints 32 ~21





UdonSharp C# Udon Udon



Sourcetree


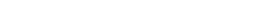
<https://www.youtube.com/embed/16clYZU0Soo>



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- Bake occlusion culling 

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- MMIRRORS!! ?????????????????????????????????????

[illegible]

<https://www.youtube.com/embed/sBpXij9G3OY>



Blender

Blender

????? Probuilder ? Unity ?????????????????????? Probuilder ?????? FBX
??

[Maebbie](#)

<https://www.youtube.com/embed/1sPXOYgrZdE?list=PLHPI0SFKkUjNIZs5K9BV4pgXiLrQpEu2D>

??????? ArchViz ?????? Archimesh?? Blender ????????



<https://www.youtube.com/embed/D2MwHYxc2uM>

???? Blender ??? SHIFT+` ???/????????????????? Unity ??????????

Blender fSpy 3D

Blender VR ???????? Oculus ? Windows MR????????????? SteamVR ?????? Vive ? Index ??????(Blender ?? OpenXR?SteamVR ??????????????????)

Blender

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<https://www.youtube.com/embed/VudCtEtNXbl>

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There are programs/addons to remesh, including (surprisingly good) free ones:

<https://www.youtube.com/embed/l88hQj16lhA>

</span

Blender

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(????????????????????????????????</span

<https://www.youtube.com/embed/0SbyO33YtL4>

<https://www.youtube.com/embed/LdQwmfPyuw0>

--???????????????????????????? HardOps ? BoxCutter ???

[Hard Surface Modeling in Blender](#) - YT Blender

Blender  ?????????????????????????????

<https://www.youtube.com/embed/0LuEqvO9QsE>



<https://www.youtube.com/embed/M7IXt4d8R4>

VRChat

4 PBR



Unity VR

Oculus

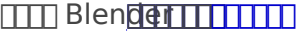
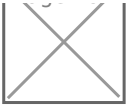
Originally posted by [**docs.unity3d.com**](https://docs.unity3d.com):
[!](https://steamuserimages-a.akamaihd.net/ugc/1482200421113069055/B12A595A448FB3935AB8004959E86BD66BECEBD8/)](https://steamuserimages-a.akamaihd.net/ugc/1482200421113069055/B12A595A448FB3935AB8004959E86BD66BECEBD8/) "1. 2. 3."

Unity Mochie

[&
(https://steamcommunity.com/linkfilter?url=https://docs.unity3d.com/2018.4/Documentation/Manual/StandardShaderMaterialParameterDetail.html) Origin
docs.unity3d.com:[!](https://steamuserimages-a.akamaihd.net/ugc/1495711913292348208/F6100F4EA2AC54417FBC244D060FB08092A8D6B9/)](https://steamuserimages-a.akamaihd.net/ugc/1495711913292348208/F6100F4EA2AC54417FBC244D060FB08092A8D6B9/)]

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[VRChat](#) [docs.vrchat.com]

[VRCLibrary](#) [vrclibrary.com]

(VRChat)

[Unity 2018.4](#) [- Unity docs.unity3d.com]

Unity (HDRPURP/LWRP2DECS DOTS)

[Brackeys](#) - Unity

[CGMatter](#) - Blender

[Digital Foundry](#) -

[Game-maker’s toolkit](#) -



[Unity](#) [forum.unity.com]/[VRChat](#) [ask.vrchat.com]



YouTube



https://www.youtube.com/embed/lrrdC_pkmGM

<https://www.youtube.com/embed/J7aTFzQKamA>



VRChat VRChat VRChat

VRChat



VRChat Inc.