Texturing

Tools involving texturing such as Substance Painter, ZBrush, Quixel Mixer and more. Also covers properly set UVs, materials, and more.

- Substance Painter Tutorials
- Resources for Substance Painter
- Model Preparation
- Creating your own textures for materials

Substance Painter Tutorials

Substance Painter for Beginners Tutorial

https://www.youtube.com/watch?v=s2MOx1Iteik

This is about an hour long video going over the basics for Substance Painter. The video starts with an overview of the UI and general layout of the application and slowly dives into more intricate features. For most people, this is a great intro.

EVERYTHING you need to know about SUBSTANCE PAINTER!

https://www.youtube.com/watch?v=uBgdLmvK_U8

About 30 minutes long, this video along with its YouTube channel, is the BEST on the internet. However, it is fast-paced and I recommend a familiarity with Adobe Photoshop (or layer/mask based image editor) or have seen the hour-long video listed above.

You can also download the 3D model he uses within the video, just follow along with the instructions while watching.

Resources for Substance Painter

Lists of additional resources and supplements to Substance Painter. Feel free to add more.

Substance 3D Community Assets

ArtStation - This will soon change to FAB (fab.com)

ambientCG - Completely free pbr textures. Be sure to download the correct size for your needs!

Model Preparation

It is important you have your 3D model ready before pulling into Substance Painter. Here are the requirements

Good UVs

Auto-unwrapping generally gets the job done with maybe some setting tweaks for UV packing. But you should NOT be editing the vertex positioning of the UVs. **This creates not only texturing problems, but also lighting problems later!**

Applied transforms including scale

Example: You take a cube. You stretch the cube on the Y-Axis. You export the cube without applying the scaling or generating new UVs. Now the cube's texture will be weirdly stretched.

Good Topology

We can go down various rabbit-holes on this subject. Here is a shorter one.

TIPS

- Consider a high and low poly version of your model for baking. What is Baking?
- The Importance of Texture Baking
- Have your modelling software and model open close by for quick edits
- An entire house as one model is fine, however, texturing that one model is bad. Break up the model into pieces (door, window, wall) and consider using REUSABLE pieces (one window model for all window models)

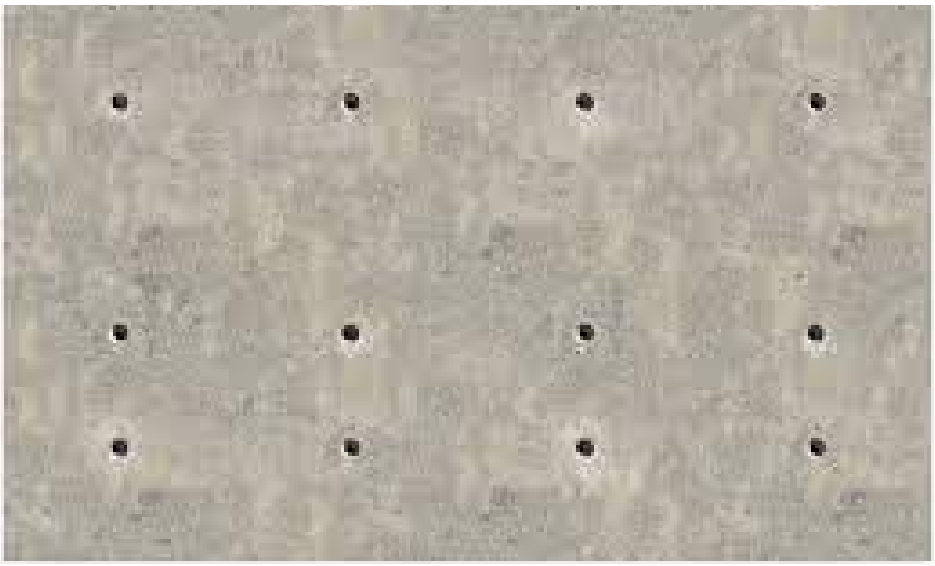
Creating your own textures for materials

About

This section involves creating your own textures for materials used in engines such as Unity or Unreal Engine. Often we use materials from Quixel Megascans, AmbientCG, Adobe Substance, or some asset pack, but it is worth knowing how to make your own textures.

The guides listed focus mostly on building what's called ***seamless textures***, or textures that *can* tile ov ıe seams that connect the textur

Non seamless... Ouch!



Seamless (much better)

Getting Started

> Prerequisites: Some familiarity with Photoshop will be helpful.

Begin with gathering a high quality photo of your soon to be texture. There are many, many guides on how to take the photo, but if you do not have a DSLR camera, an iPhone camera will still do great. Look out for things such as good lighting, no shadows being cast, and keeping your photo shot straight and perpendicular. Take many photos if possible for backups and references (e.g. find other tufts of grass, or turn over the wood plank, etc.)

Photoshop

These YouTube videos that will explain the process. Feel free to search more as well, or find one specific to the texture you are creating.

Base color textures:

- https://www.youtube.com/watch?v=owm0R2uDMtY
- https://www.youtube.com/watch?v=vE0dR-TWVg4

Normal Maps:

- https://www.youtube.com/watch?v=YJqWHsllczY

Normal Map (generator)

- https://cpetry.github.io/NormalMap-Online/

> Be careful of using generators. They are approximations based off the image received as input and the algorithms can't determine that your wood photo is actually wood.

Where to go from here?

This guide covers taking photos, editing photos into seamless textures, and creating normal maps. Consider researching other photoshop tutorials that cover maps such as roughness and metallic.

Other maps, such as shadows, ambient occlusion, cavity, can be generated in modelling tools like Blender or Maya. I recommend assigning these base color and normal maps to your modelling software's materials and producing these additional maps.

When completed, always test your maps and models in their final rendering destination. For SCiL, it is mostly Unreal Engine or Unity.