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Final Project

Inspiration

The image above is taken inside the game *Stray*, where you play as a cat exploring a dilapidated, underground city populated with robots. I wanted to try my best to recreate this scene.
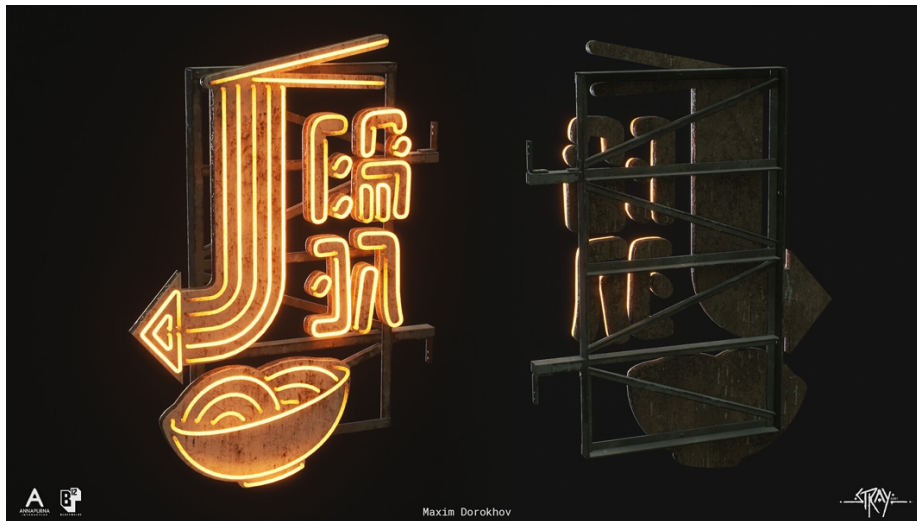
Final Image

Project Requirements

Leveraging the power of ray tracing:

The center piece of my project is the neon sign in the center of the image. It is surrounded by a thin layer of fog which helps exploit ray tracing's better illumination capabilities. This extends to a soft glow emanating off the neon beams as well as color bleeding onto and soft shadows off the pipe running up the wall. There's also light reflection off the windows on the same building and on the metallic aspects of the corrugated roof at the bottom left corner of the image.

Main geometry from scratch:

Every piece of geometry in my scene was created from scratch, except for the cat. This includes the neon sign, which is the main geometry/focus of my scene. I modeled the sign off an official image of the game asset, which I will include below, but I didn't reference any tutorials to do so.

UV mapping and texturing from scratch:

All UV maps and textures in my scene were created from scratch, but I did reference several YouTube tutorials to guide me (though I used them more as inspiration than a hard design). Specifically, I UV-unwrapped the large pipe and then created a procedurally-generated material to emulate a rusted metal texture. I'll include an image of the material nodes on the next page.

Blender/Cycles advanced feature:

The main advanced feature I used was depth of field. The cat is the focal point of the image, and the focus (or lack thereof) is most apparent in the blurred background.
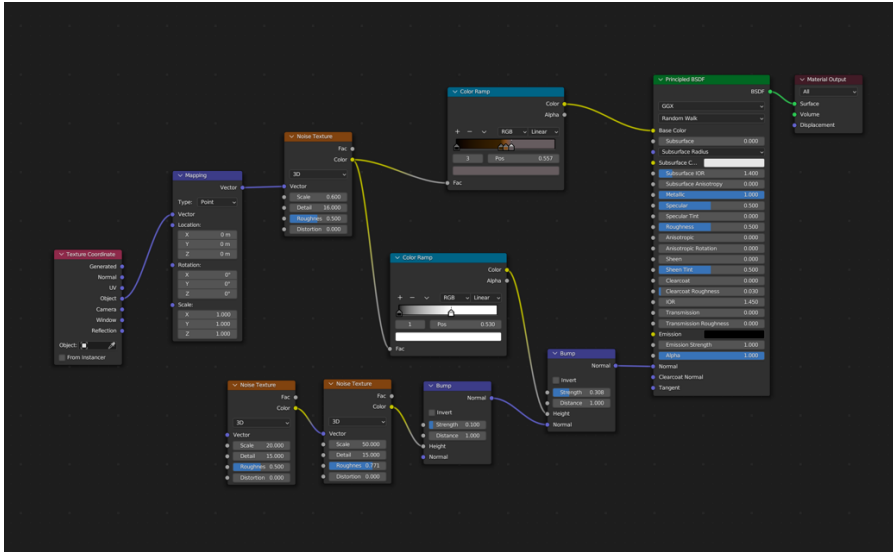
Figure 1. Material nodes for rusted metal texture.

Project Assets

As I said above, I created all geometry from scratch, except for the cat model. I also downloaded an image offline to use as the building façade background at the back of my scene. Links to both are included in the Resources section below.

Variant Images

Variant A:

Variant B:

Resources

Inspiration Photos
- Scene: https://za.ign.com/stray-1/165554/gallery/stray-preview-screenshots?p=1
- Sign Model: https://www.artstation.com/artwork/B3lbJA

Cat Asset: https://www.cgtrader.com/free-3d-models/animals/mammal/cat-8f299065-4ddc-4308-a0f8-510f08be3ee4

Background Image: https://www.istockphoto.com/photo/worn-out-apartment-building-from-the-communist-era-against-blue-sky-in-bucharest-gm1465541472-497919248

Texture Tutorials
- Rust: https://www.youtube.com/watch?v=hccqcCIGGUw
- Dirty Metal: https://www.youtube.com/watch?v=uqfcV56SHMc
- Plaster: https://www.youtube.com/watch?v=EwB3HWcUdEk
- Cast Iron: https://www.youtube.com/shorts/P_5K_jA0cXE
- Worn-Out Paint: https://www.youtube.com/watch?v=CKSFcjaYrQo