

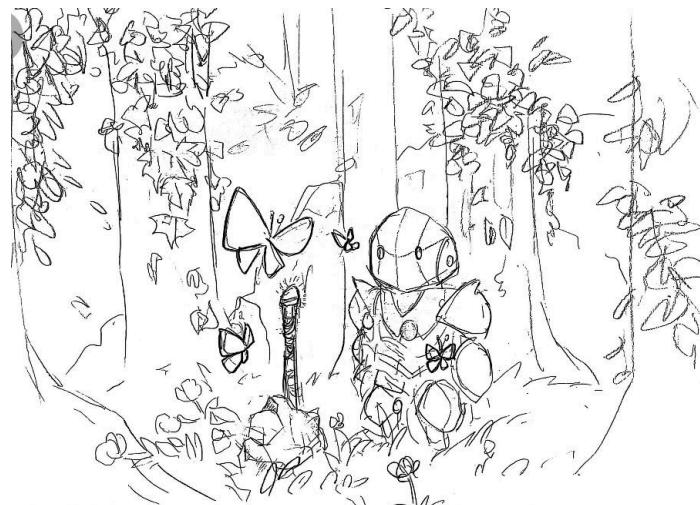
# CS148 Final Report

Haoran Jia (haoranj), Yingke Wang (yw1018)

Our Image:



Reference Images:



## How Do We Meet Project Requirements:

We leveraged Blender's Cycles path tracing by combining the Nashita sky environment light with point lights and emissive planes (the background), which together produced soft, physically plausible illumination and clear readability of our models. For modeling, we created the main geometry from scratch: the central robot, the butterflies, the lighthouse, several trees with branches and exposed roots on the back, as well as three of the rocks. To enrich the scene, we also incorporated online geometry for lying tree trunks, simplified tree trunks without branches or roots, and the base ground and plants. On the shading side, we performed UV unwrapping and fully custom texturing for one of the rocks, the lighthouse, and all butterflies, using Principled BSDF materials authored directly in the node editor. The remaining assets, such as the robot, ground and plants, trees, and other rocks, were textured using online image assets wired through Principled BSDF shaders, with multiple image textures and vector converter nodes to control color, roughness, and normal detail. Finally, we implemented an advanced Cycles feature through two nested volumetrics spheres in the glowing light ball, helping tie the lighting, geometry, and materials into a cohesive, atmospheric final render.

- Main geometry from scratch: the whole robot, butterflies, lighthouse, trees with branches and roots, three rocks
- Geometry from online: lying tree trunks, tree trunks without branches and roots, ground and plants
- Lighting: using the Nashita sky environment light, point lights, and emissive planes
- UV Mapping:
  - UV unwrap: one of the rock
  - Texturing from scratch: lighthouse, butterfly, one of the rock
  - Texturing using online image assets through node: robot, ground and plants, trees, other rocks
- Cycles advanced feature: volumetrics (the light ball)

## Member Contributions:

- Yingke: robot, butterflies, lighthouse, tree trunks, ground and plants, environment and lighting, light ball, textures
- Haoran: trees with branches and roots, three rocks, UV unwrap and textures

## Sources:

- Assets:
  - Tree Bark Texture: <https://ambientcg.com/view?id=Bark014>,  
[https://polyhaven.com/a/bark\\_brown\\_02](https://polyhaven.com/a/bark_brown_02)
  - Rock Texture: [https://polyhaven.com/a/coast\\_sand\\_rocks\\_02](https://polyhaven.com/a/coast_sand_rocks_02)
  - Robot Textures: <https://3dtextures.me/2025/08/27/glass-pattern-003/>;  
<https://3dtextures.me/2021/01/07/metal-scratched-007/>;  
[https://3dtextures.me/2016/06/23/metal-galvanized-001/#google\\_vignette](https://3dtextures.me/2016/06/23/metal-galvanized-001/#google_vignette);

- <https://3dtextures.me/2016/07/02/metal-rusted-001/>;
  - <https://3dtextures.me/2018/01/02/metal-scales-001/>
- Ground and Environment:  
<https://www.turbosquid.com/3d-models/meadow-patch-grass-3d-model-1459999>;
- Two of the trees:  
<https://www.turbosquid.com/3d-models/forest-ground-trees-mossy-trunks-debris-pt9-photogrammetry-3d-model-2360772>;
- Tutorials:
  - Rock obj:  [How to Create Low Poly Rocks in 1 Minute](#)
  - Tree:  [Artistic Trees In Blender](#)
  - Butterfly: [Easy Butterfly in Blender 3.0](#)
- Images:
  - Butterfly:  
<https://www.rawpixel.com/search/blue%20butterfly?page=1&path=1522&sort=curated>
  - Background:  
[https://www.shutterstock.com/search/pine-forests?dd\\_referrer=https%3A%2F%2Fwww.google.com%2F](https://www.shutterstock.com/search/pine-forests?dd_referrer=https%3A%2F%2Fwww.google.com%2F)