Project 2: Procedural Motion and Mechanical Objects
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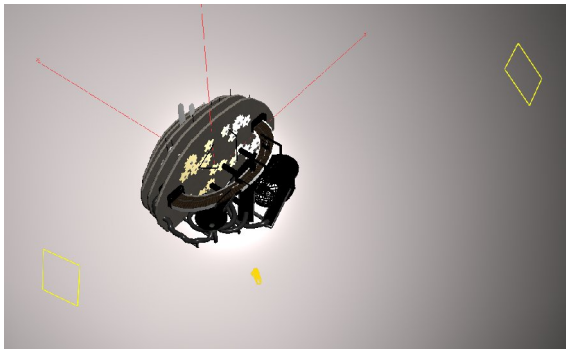
Houdini Version: 12.5

Important statistics:

Average render time: 2:50 per frame, 720x480, pixel samples: 8 x 8 , noise value: 0.02, min/max ray: 1/15

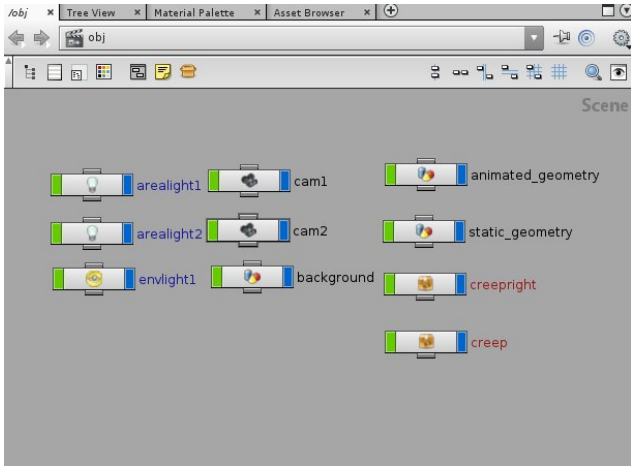


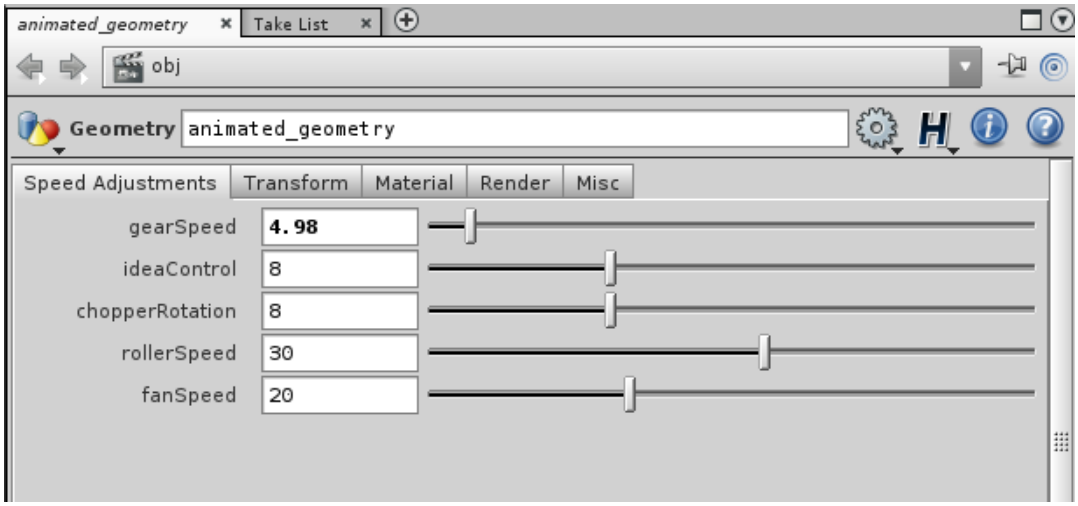
Number of lights in scene: 3 lights
-Area Light (key)

-Area Light (fill)
-Environment Light w/HDRI

Complexity of geometry:

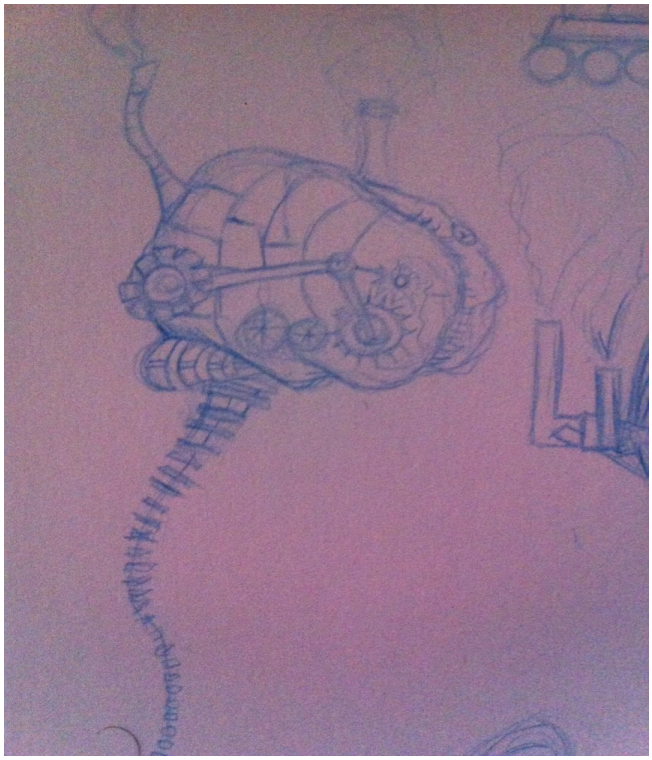
- 4 conveyor belts
- 23 total gears and cylinders
  - each cylinder includes geometry attached to each end
- 2 spinning funnels
- 6 pipes (geo projected to curve) (2 associated with creep node are invisible)
- roughly 20 support beams
- conveyor belt tunnel
- 6 conveyor belt extensions (chopping blocks)
- 5 right side walls

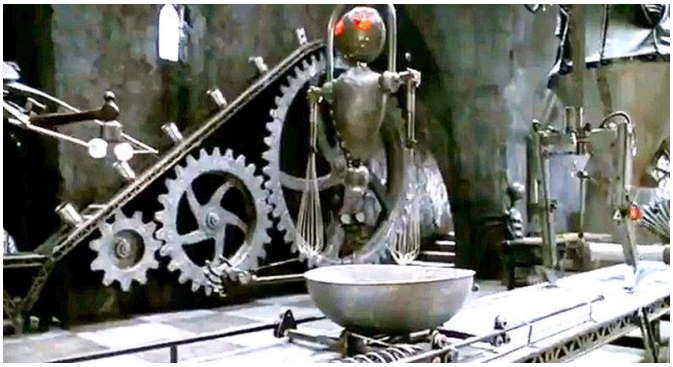


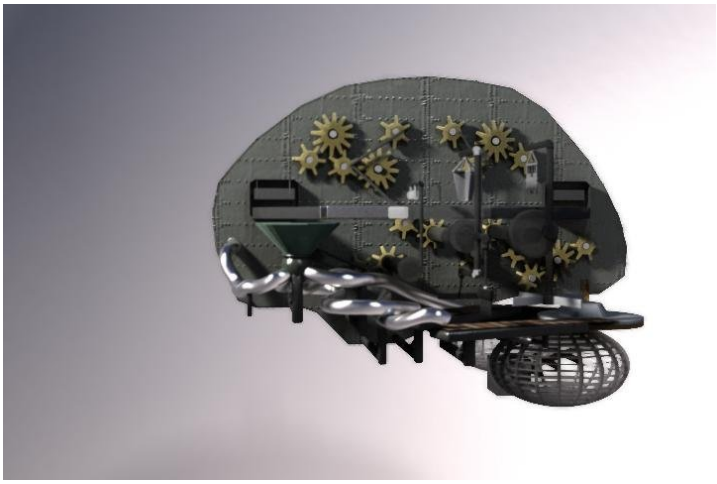


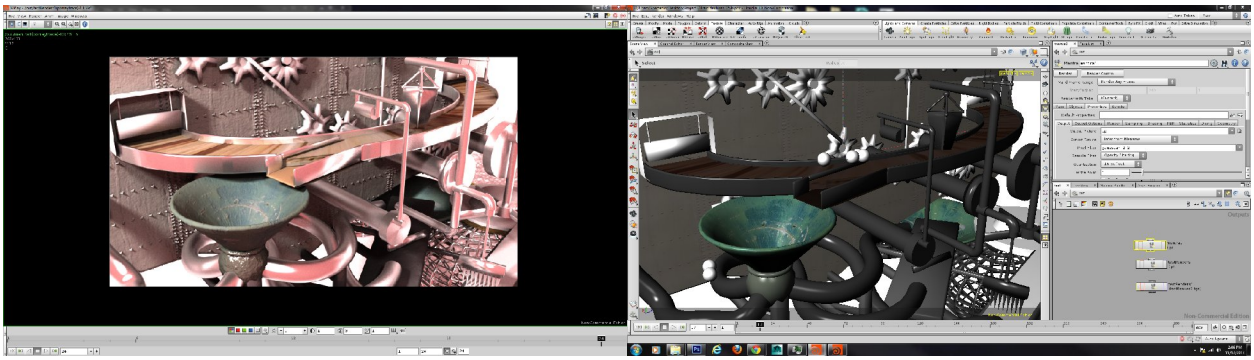
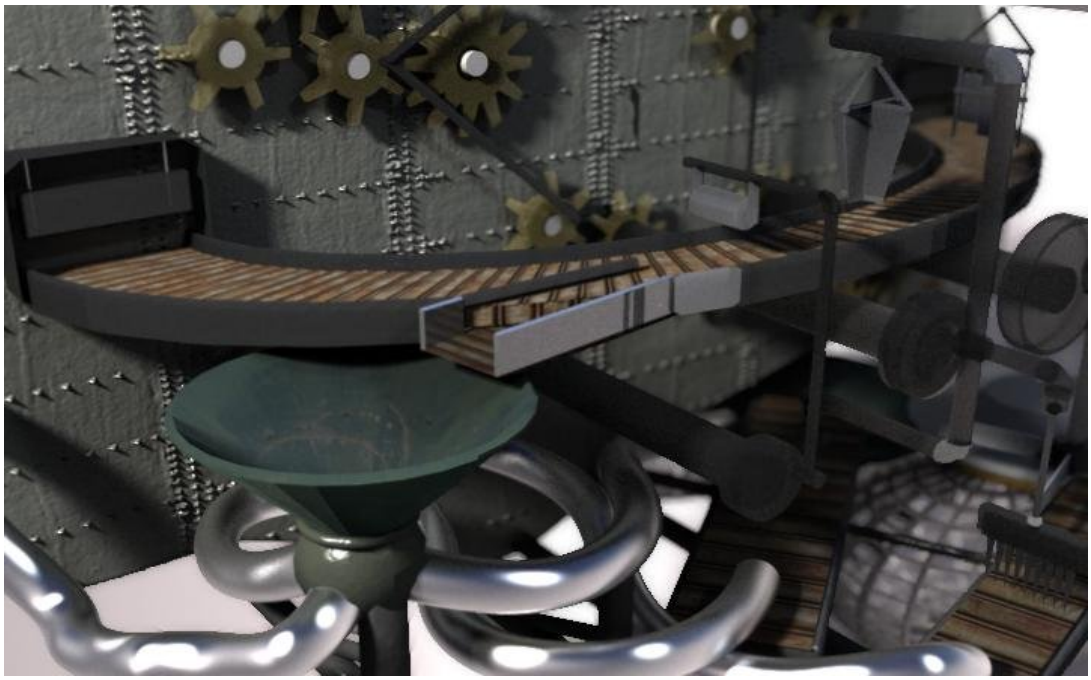
Project Description:

- My concept is a steam-punk/mechanical factory representing the generation of ideas in the human brain. The right side of the brain contains walls with extensions popping out after every rotation. The left side includes a series of conveyor belts with chopping blocks and filters. The look is inspired by the cookie factory scene in the film “Edward Scissorhands”







Problems encountered and solutions:

- Creating an original design with somewhat believable movement was a difficult task. A great deal of time was spent on setting the animations. Simple frame rotations were used for cylinders and gears and sin and cos were frequently used for calculating rotations for the extensions and chopping block devices. Most of the gear movements are referenced to channels of the largest gears, which are connected to parameters providing a slider for speed.
- Creep Node, unfortunately, spending time setting up the animations prevented me from finessing the creep node movement.
- I had trouble with UV's on a few things. A couple pieces of geometry(conveyor belt) were exported to Maya for proper uv mapping and then exported back into Houdini for texturing.
- Houdini's 3D view port was a constant hassle. Some geometry tends to randomly disappear from the display. Toggling the view port, rebooting the scene, and restarting Houdini all helped most of the time.
- A few issues with sourcing files properly. (red HDRI)