

Synthetic Data Pipeline for Pose Estimation (Milestone 5)

Group: Nathan Pichette, William Stern, Stephane Baruch, Hanibal Alazar
Faculty Advisor: Dr. Ryan White

Overview of Milestone 5

- Added new lighting features
- Added movement to the camera
- Tested STL files
- Wrote documentation
- Added Earth
- Added Stars

Milestone 5 Matrix

Task	William	Nate	Stephane	Hanibal	To Do
1.Add additional lighting features	0%	100%	0%	0%	
2. Refactor code to change moment from the satellite to the camera	100%	0%	0%	0%	
3. Attempt to implement .stl files for satellite model	0%	0%	100%	0%	
4. Make background pannable	100%	0%	0%	0%	
5. Start writing documentation for program	0%	0%	0%	100%	Continue adding documentation and detail
6. Write Ebook page	0%	0%	0%	100%	
7. Create poster	0%	100%	0%	0%	

New config file options

- We added many new options to the config file for controlling stars, earth, lighting, and camera movement.

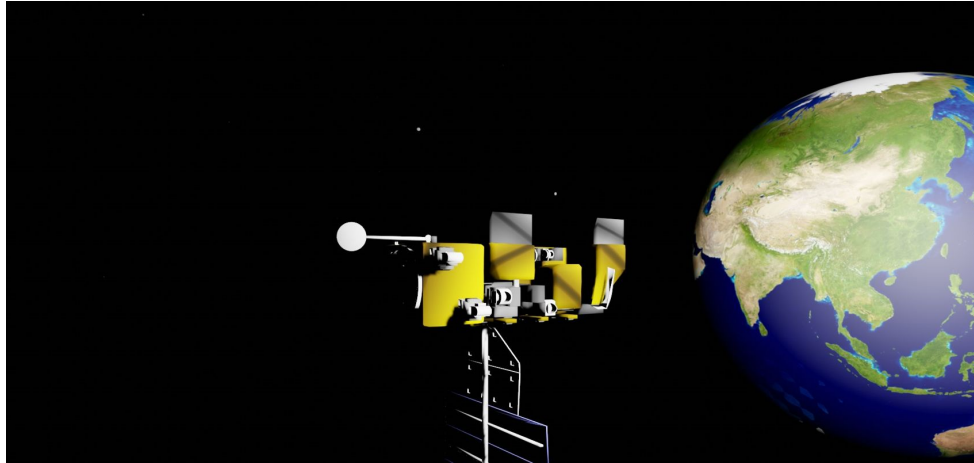
```
[earth]
earth_file = "/models/earth/Globe.obj"
earth_location = [5, 5, 5]
```

```
[stars]
star_seed=1
num_stars= 100
min_dist = 50
max_dist = 1000
brightness = 100
max_size = 1.0
min_size = 0.05
```

```
[camera_flightpath]
flight_path_type = "FUNCTION" #
positions = [[0,0,0],[0,-15,0]]
rotations = [[1.5, 0.0, 0.0],[1.5, 0.0, 0.0]]
x_eq = "15*math.cos(t/10.0)"
y_eq = "15*math.sin(t/10.0)"
z_eq = "0"
```

New Stars

- Instead of having a static background we create our own by adding stars
- Add thousands of small light emitting spheres to the background
- The user can customize the brightness, size, number, and distance of these stars



Demo



Milestone 6 Matrix

Task	William	Nate	Stephane	Hanibal
1. Finish adding all customization to the <u>toml</u> file.	demo	dev	Test	test
2. Make camera view changeable	Dev	Test	Dev	test
3. Work on video demo	Dev	Test	Test	Dev
4. Get evaluation from client team	Dev	Test	dev	demo
5. Work on user manual and developer manual	Test	demo	test	dev
6. Refactor code	Dev	Dev	Test	demo

Questions?