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Course: CAP5145

Due Date: 26Oct2023 11:59pm

1. **Title of Project:** 3D model from 2D image
2. **Problem Definition:** Given a single image of an inanimate object, we want to use a single 2D image to create a 3D model of inanimate objects like cars, chairs, etc.... I can use these 3D models and import them into 3D Art Software such as Blender to create art.
3. **Dataset Used:** ShapeNet
 - a. **Source:** <https://shapenet.org/>
4. **How to solve the problem:** Point cloud representation using a 2D Convolutional NN to learn the prior shape knowledge present in the ShapeNet Dataset
5. **Contribution:** Since there is a limited amount of time and geniuses have already done a lot of the work before me... The best I can do is to streamline the process of converting 2D images to 3D images for aspiring 3D artists such as myself who might not have the time and patience to learn machine learning. 3D art can be tedious. And at least for myself; I prefer sculpting humans and organic structures over modeling chairs. Also, I can show how you can take a base object created using a Neural Network, import it into 3D Art software such as Blender and modify them for your purposes. This can save a lot of time for 3D artist who make complex pieces with many objects.

Assignment Details:

Please submit a short description of your course project. It should include,

- Title of the project
- Problem definition
- What dataset will be used
- How will you solve this problem
- What will be your contribution

Few points to note:

- You can use existing code from GitHub as long as you indicate the source and describe what changes you have made.
- You can use any library which you need for the project, but you should clarify what part of the code you wrote yourself.
- What is not allowed: you use some existing code and submit as your project without any changes.
- If you are forming groups, each student should submit the same details with additional details at the end, with all team members name
 - It is not required at this time, but role/contribution of each student should be clear in the final submission, so plan accordingly.
 - Team members of a group might get different grades depending upon what their contribution was.