# SOCIAL CLOTHING SAMPLER

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## Introduction

- A major issue of online shopping is the huge apparel returns due to poor fitting.
- The objective of the project is to develop an application which helps the customers to choose their desired garment and "virtually" try it on their avatar.
- The users will get a 3rd party perspective of how the style would look in different lighting conditions.

## Related Work

### 2D approach

Images of various poses are stored. When a customer stands in front of the virtual mirror, the matching poses are retrieved and mapped onto the body.

### 3D approach

The mathematical model of the apparel and the body are determined and used to decide the apparel size and analyze fitting.

## Methods Used

### Garment as Object

- Scanned human body
- Rig to armature
- Modelled garments
- Assign copy of rigged body to rigged cloth
- Align the copy and actual rigged body

### Garment as Cloth

- Scanned human body
- Rig to armature
- Modelled garments
- Attach garment as mesh to Unity Cloth and set constraints & colliders
- Set constraints and colliders to mesh

## Future Work

- Automate rigging process and add cloth constraints. Add more colliders to effectively handle simulation.
- Add animations to get 360 degree view. Develop more interactive app to examine the fitting.

## Discussion

- The main challenge was adding colliders to the cloth. Unity 5 does not handle cloth mesh collisions anymore due to performance issues.
- Another limitation is that only spherical and capsule colliders can be added to the new cloth framework.
- Different body parts have to be identified dynamically and appropriate colliders should be added for better results.

## Technologies Used

- Avatar Workbench 263
- Blender 2.77
- Unity 5.5.1f1

## Selected References

[2] Project website: https://sites.google.com/a/g.rit.edu/capstone/home