**Deep Fashion Design in the Wild**

**Background**
- Clothes Images/Sketches
- Additional Elements
- Style Patterns

**Project Overview**
- Clothes Image
- Additional Elements
- Synthesized Image
- Style Image
- Segmentation (GrabCut)
- Style Transfer (CNN)
- Synthesis and Process
- Transferred Clothes Image

**Methodology**
- Foreground Segmentation: GrabCut
- Style Transfer: CNN style transfer
  \[ L_{total}(\hat{\mathbf{f}}, \hat{\mathbf{a}}, \hat{\mathbf{x}}) = \alpha L_{content}(\hat{\mathbf{f}}, \hat{\mathbf{x}}) + \beta L_{style}(\hat{\mathbf{a}}, \hat{\mathbf{x}}) \]

**Experiments**
1. **Initialization**
   Content or random image as initial image

2. **Optimizer**
   - Content image (with logo)
   - Style Image
   - Adam Optimizer
   - L-BFGS Optimizer

3. **Modified Loss Function**
   - Content image
   - Style Image
   - With Modified Loss Function
   - Original Output

4. **Final Results**

**Implication**
This project aims at making fashion design accessible for everyone. Girls can add desired fashion elements to their daily photos. Combining with the advance of 3D printing, it has the potential to unleash people's creativity and the pursuit of aesthetics.

**References**