

# EEL 5934 Digital Image Processing

## Members:

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## Project Proposal: Cartoonizer App

**Project Title:** Cartoonizer App – A MATLAB GUI for Cartoonizing Images

### Project Overview:

This project aims to create a MATLAB-based GUI application that converts photographs into cartoon-style images mainly using edge detection, color quantization, and bilateral filtering techniques. The app will be a intuitive tool for users to generate unique cartoon effects from their images.

### Objectives:

- Develop a user-friendly GUI for uploading images and displaying cartoonized results.

### Methodology:

1. **GUI Development:** Design a layout with buttons for uploading images and cartoonizing them, alongside display areas for the original and processed images.
2. **Image Processing Pipeline:**
  - Load the image and convert it to grayscale.
  - Apply edge detection and color quantization.
  - Use bilateral filtering for smoothing.
3. **Integration:** Connect processing functions to GUI buttons and ensure that results are displayed side-by-side.

### Tools and Resources:

- **Software:** MATLAB with Image Processing Toolbox.
- **Hardware:** Standard computer/ laptop.

### Outcome:

The Cartoonizer App will provide users with an effective and engaging way to transform their images into artistic cartoons, showcasing fundamental image processing techniques in MATLAB.