

ENGR 133 Fa23 Individual Project Proposal	
Full Name (Purdue login)	Robert Zhang, zhan4808@purdue.edu
Section - Team Number	LC3; Team 27
Programming Language	Python
Project Theme	Image Filtering
Proposal Description	<p><b>Project Description:</b></p> <p>I plan to create an image filtering program that allows users to apply various filters to their image. The program will implement user input functionality for selecting an image file or entering its path, output the filtered images, providing users with a visual representation of the applied filters, and include error checking algorithms to handle cases where the input file is not an image or is inaccessible.</p> <p><b>Project Implementation:</b></p> <p>I plan to mainly use OpenCV's robust capabilities for image manipulation and numpy's manipulation of image arrays. The filters will be either provided by the users such as sepia or can be as simple as selecting grayscale, edge detection filter, or color quantization. I will use matplotlib and inline to format my output and plot my images and may use the Image library from PIL to read images.</p> <p><b>Personal Connection:</b></p> <p>As someone with a background in machine learning and interested in how image processing methods actually work, being able to work on a project that employs some of the widespread image filtering and processing methods is insightful into how image processing actually works and the features it extracts from the image. Also, as an aspiring photographer and video editor, it would be interesting to see how applying my filter on an image compares with an app like Photoshop's filters on my photos.</p>