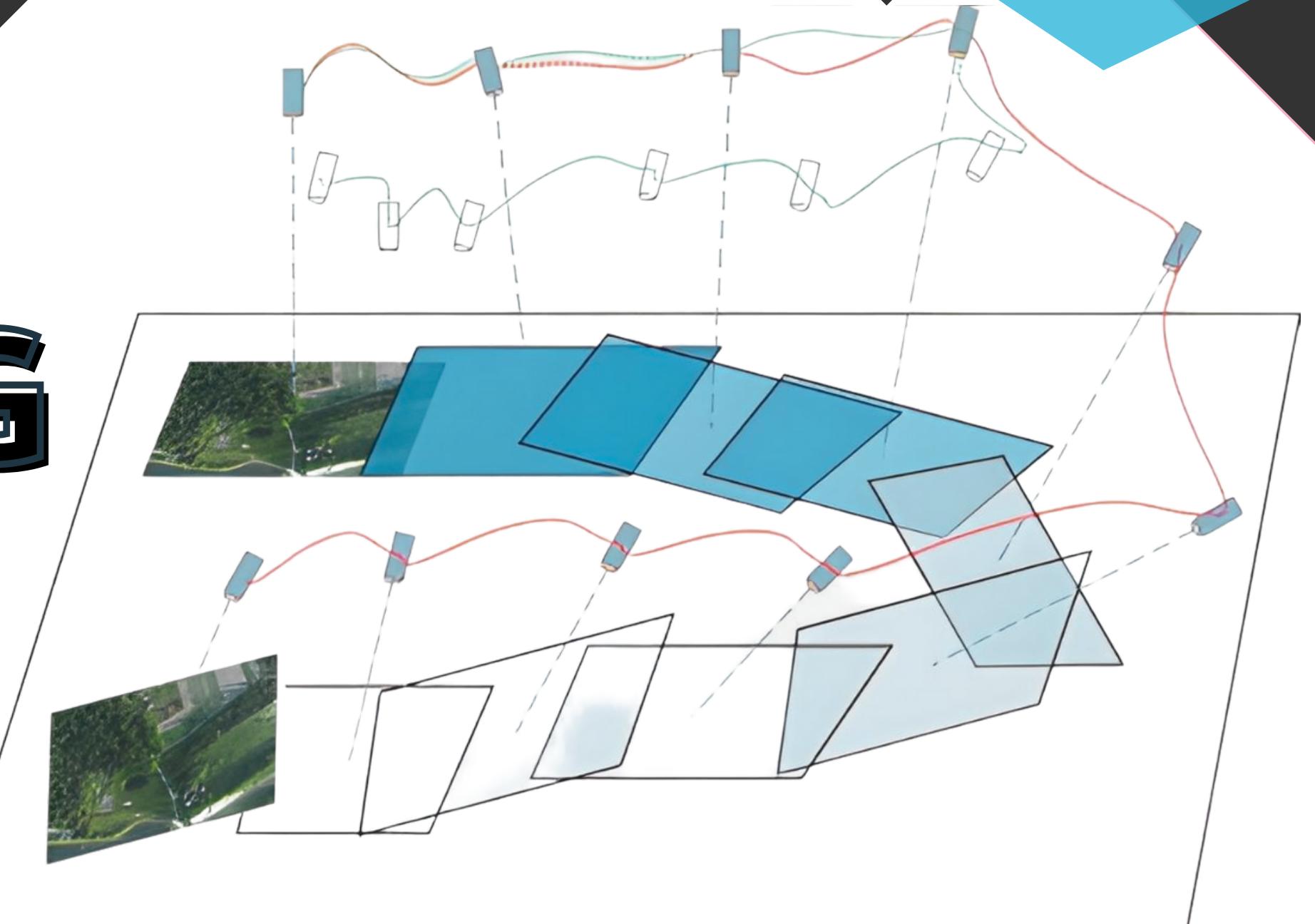


# IMAGE MOSAICING

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Guided by : Dr. Mohammad Ahmed



# INTRODUCTION

- Image mosaicing is an image processing technique.
- It combines smaller images of the same scene into a larger one.
- The final mosaic consists of the two input photographs combined.
- To create mosaiced images, image-mosaicing algorithms are utilized
- Image mosaicing is used in everyday life by stitching together images to create panoramas.



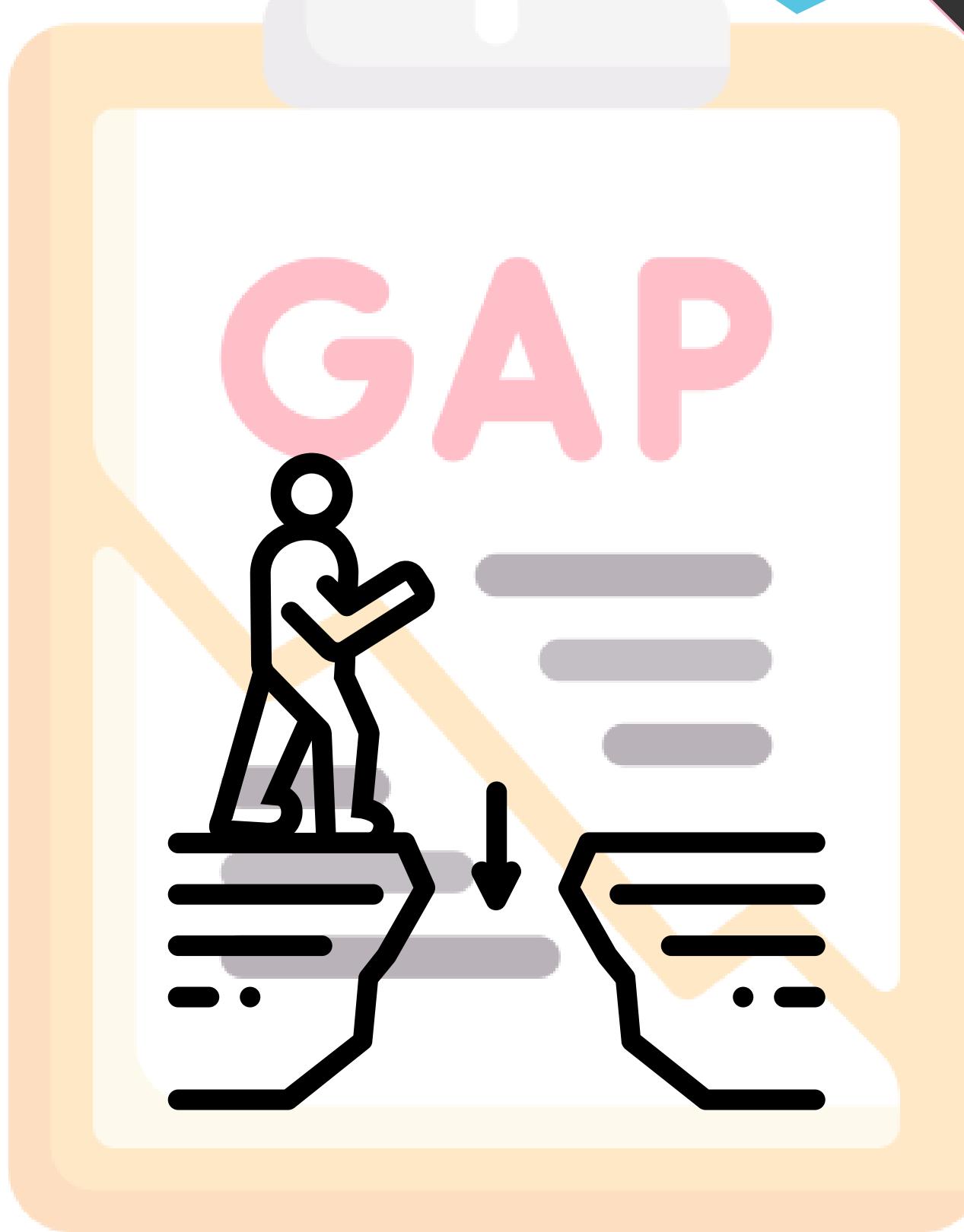
# OUR WORKS

- The proposed system would address the shortcomings of the existing system and also aim to train our system on images taken from various angles and distances.
- To accomplish our objective of image mosaicing, our system makes use of a variety of techniques, including conversion to grayscale, SIFT, and RANSAC.

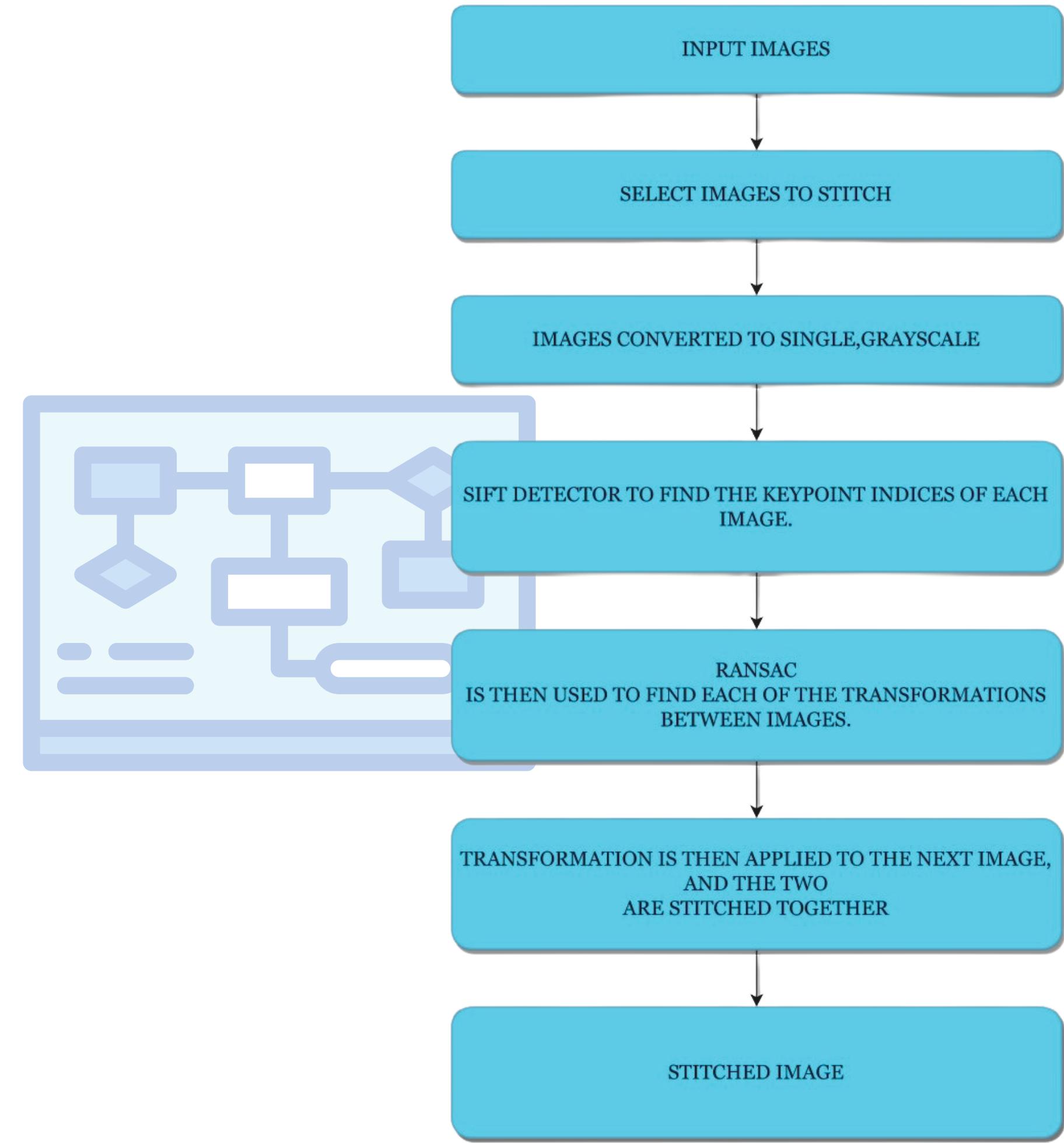


# RESEARCH GAPS

- The mosaiced image's color and brightness are not taken into account.
- It is not able to stitch multiple images.
- It is assumed that the only offsets between two consecutive overlapping images are the large offset in the horizontal direction and the tiny offset in the vertical direction.
- If images are captured at different times, the lighting details will change, and the lighting will be incorrect when the images are stitched together.
- Assuming that the scene is flat. Geometrical distortions, like the tiny discontinuities of the boulder edges across the image seam, are introduced when this assumption is broken.
- Some pixels may be left blank during stitching if photos are not properly vertically aligned.



# FLOW OF SYSTEM

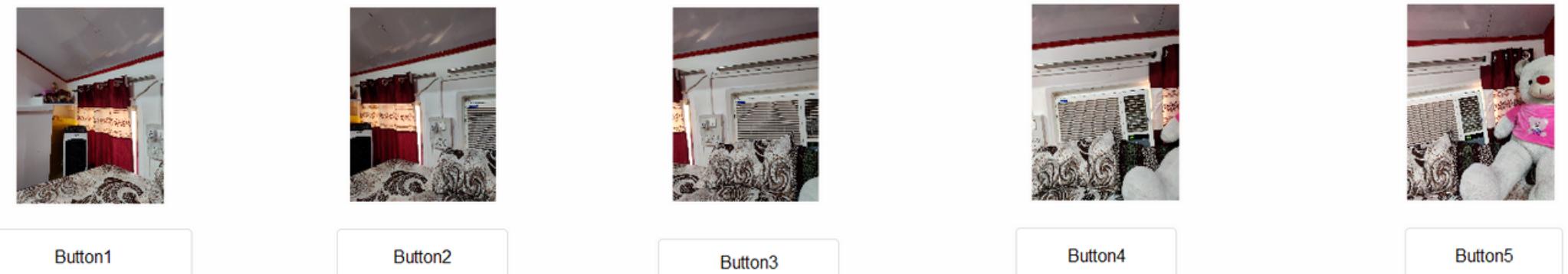


# HARDWARE & SOFTWARE REQUIREMENT

<b>HARDWARE</b>	<ul style="list-style-type: none"><li>• Camera</li><li>• Laptop</li></ul>
<b>Coding Language</b>	<ul style="list-style-type: none"><li>• MATLAB</li></ul>
<b>External Tools</b>	<ul style="list-style-type: none"><li>• MATLAB</li><li>• MATLAB Computer Vision Toolbox</li><li>• MATLAB Image Processing Toolbox</li><li>• MATLAB VLFeat Library</li></ul>
<b>System Requirement</b>	<ul style="list-style-type: none"><li>• 4.0 GB RAM</li><li>• Intel or AMD x86-64 processor</li></ul>
<b>Operating System</b>	<ul style="list-style-type: none"><li>• Windows 11</li><li>• Windows 10 (version 20H2 or higher)</li></ul>



# Experimental RESULTS



MATLAB R2022a

HOME PLOTS APPS EDITOR PUBLISH VIEW

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FILE NAVIGATE CODE ANALYZE SECTION RUN

Current Folder C:\Users\darsh\Downloads\Mini\_Project\_SEM6-main\Image-Stitching\src

image\_stitching.m App.m App.fig

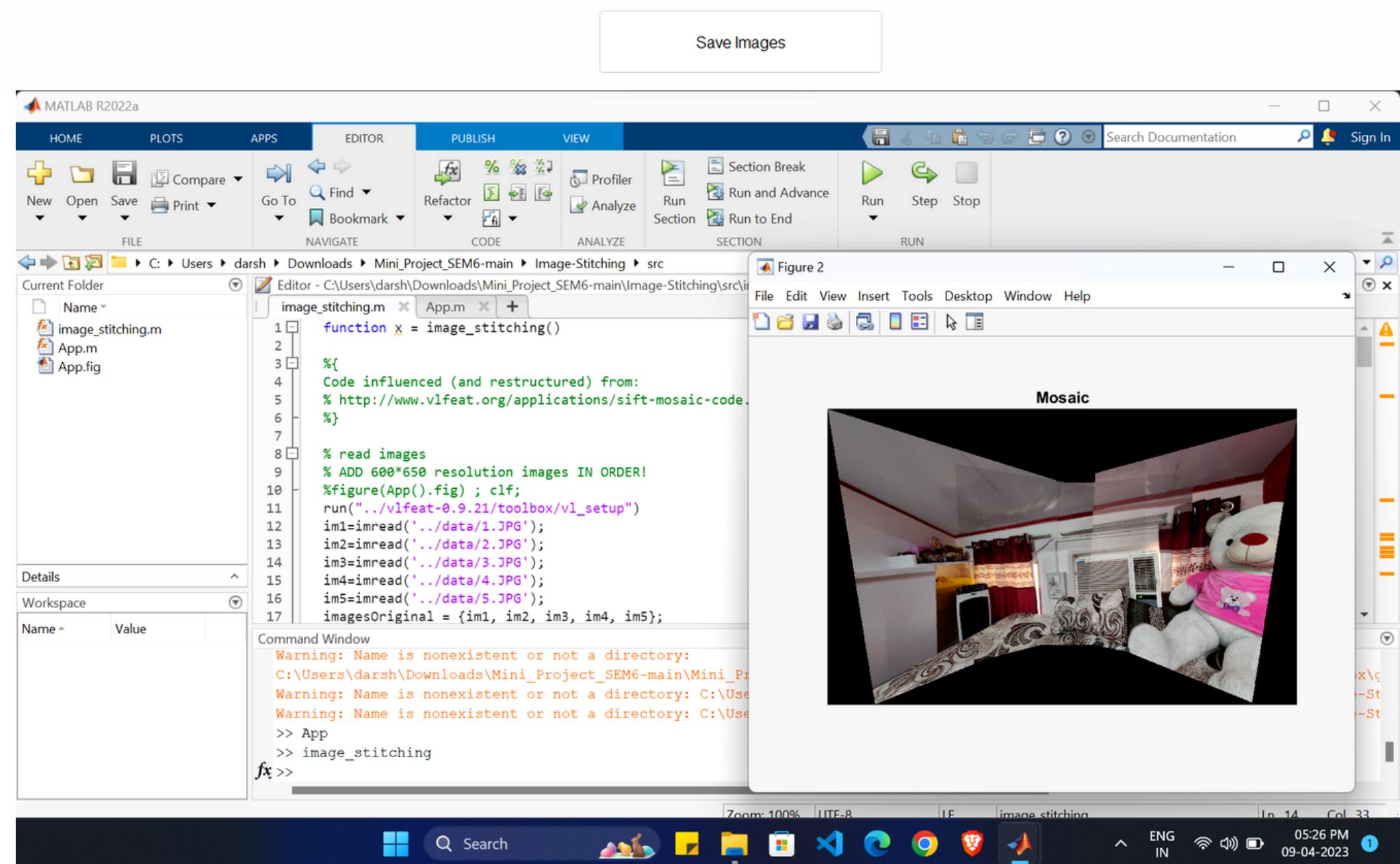
Editor - C:\Users\darsh\Downloads\Mini\_Project\_SEM6-main\Image-Stitching\src\image\_stitching.m

```
function x = image_stitching()
%
% Code influenced (and restructured) from:
% http://www.vlfeat.org/applications/sift-mosaic-code.
%

% read images
% ADD 600*650 resolution images IN ORDER!
%figure(App().fig); clf;
run("../vlfeat-0.9.21/toolbox/vl_setup");
im1=imread('../data/1.JPG');
im2=imread('../data/2.JPG');
im3=imread('../data/3.JPG');
im4=imread('../data/4.JPG');
im5=imread('../data/5.JPG');
imagesOriginal = {im1, im2, im3, im4, im5};
```

Figure 2

Mosaic



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Warning: Name is nonexistent or not a directory: C:\Use...  
Warning: Name is nonexistent or not a directory: C:\Use...>> App  
>> image\_stitching  
fx>>

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# CONCLUSION AND FUTURE WORK

- Image mosaicing, also known as image stitching, is the act of combining two or more photos to generate a single image.
- Our proposed system uses a number of techniques to achieve our goal of image mosaicing, including Harris Corner Detection, SIFT, FAST and RANSAC.
- In future we will be able to train the system on a range of data by collecting photographs at various distances and angles, which will help us ensure accuracy.
- Future work will involve training the system to merge photographs captured under various lighting circumstances to create a single image with the proper illumination.



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# THANK YOU

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