



## Senior Design Project in Electrical & Computer Engineering



# Spatial Domain Interference Removal

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### Project Goals:

Create software that removes interferences from images and video; producing an output image/video with a clear stationary background

### Background Information

- Digital images and video are presently used in many surveillance and data collecting applications.
- For example, photographers use image processing to enhance the color in a picture, and most government buildings have cameras recording areas of significant importance.
- Often, these images do not capture what is intended by the human operators. The images and video can encounter external objects that obstruct the view of the intended items, decreasing the quality and usefulness of the images and videos.
- A better image or video with improved quality can be produced using several image processing techniques

### Methods / System Design

Digital Imaging tools include software program. MATLAB is the software used to produced algorithms

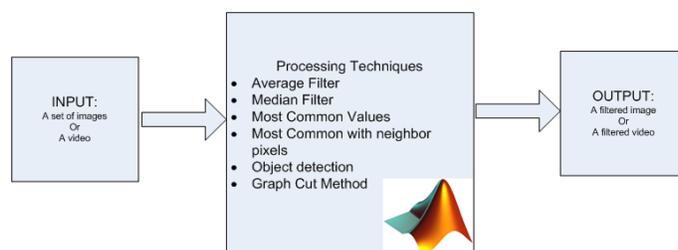


Fig1. Processing Diagram

### Results / Future Plans

- Interference is removed in most cases, but not completely
- Get more images/video samples such as video from surveillance camera
- implement more efficient techniques
- Incorporate with other software creating user friendly interface.



Input image (a)



Input image (b)



Input image (c)



Input image (d)



Input image (e)



Fig2. Result of Median filter



Fig3. Final Result

Given a set of 5 images, our median filter can remove interferences in most parts, see Fig2. The final result in figure 3 is the result that the project team is going for. The final result is produced by using graph cut method.

### Project Timeline

Events	Finish by
Programming all the techniques and testing	25 March 08
Software creating user friendly interface	10 Apr 08
System Integration and system integration testing	28 Apr 08