# Image Enhancement(SRGAN)

| Deep Learning | 18AIC301J |

## Team Members

1. Shourya Prasad (RA2011047010001)
2. Charanjeet Singh (RA2011047010005)
3. Abhinn Daga (RA2011047010007)
4. Glenn Paul Aby (RA2011047010017)
5. Prateek Uniyal (RA2011047010032)

## Abstract

Image restoration is a position-sensitive procedure, where pixel-to-pixel correspondence from the input image to the output image is needed. Therefore, it is important to remove only the undesired degraded image content, while carefully preserving the desired fine spatial details (such as true edges and texture).

## Problem Statement

With the rapidly growing image content, there is a pressing need to develop effective image restoration and enhancement algorithms.

Since a normal image is not clear and it may not show some useful information or its brightness level seems inappropriate, then to get rid of such problems, we perform image restoration and enhancement to get a better and clearer image.

## Approach

The core of this approach is a multi-scale residual block containing the following key elements:

- parallel multi-resolution convolution streams for extracting multi-scale features •

  information exchange across the multi-resolution streams

- spatial and channel attention mechanisms for capturing contextual information •

  attention based multi-scale feature aggregation.

We perform qualitative and quantitative assessment of the results produced by our MIRNet and compare it with the previous best methods. Next, we describe the datasets, and then provide the implementation details. Finally, we report results for (a) image denoising, (b) super-resolution and (c) image enhancement on five real image datasets.

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