Super-Resolution
(Face Hallucination)

Motivation

- Implementation of Super Resolution (Face Hallucination) by Convolutional Neural Network
- [Faces dataset](#)

Introduction

- [Image Super-Resolution Via a Convolutional Neural Network](#)
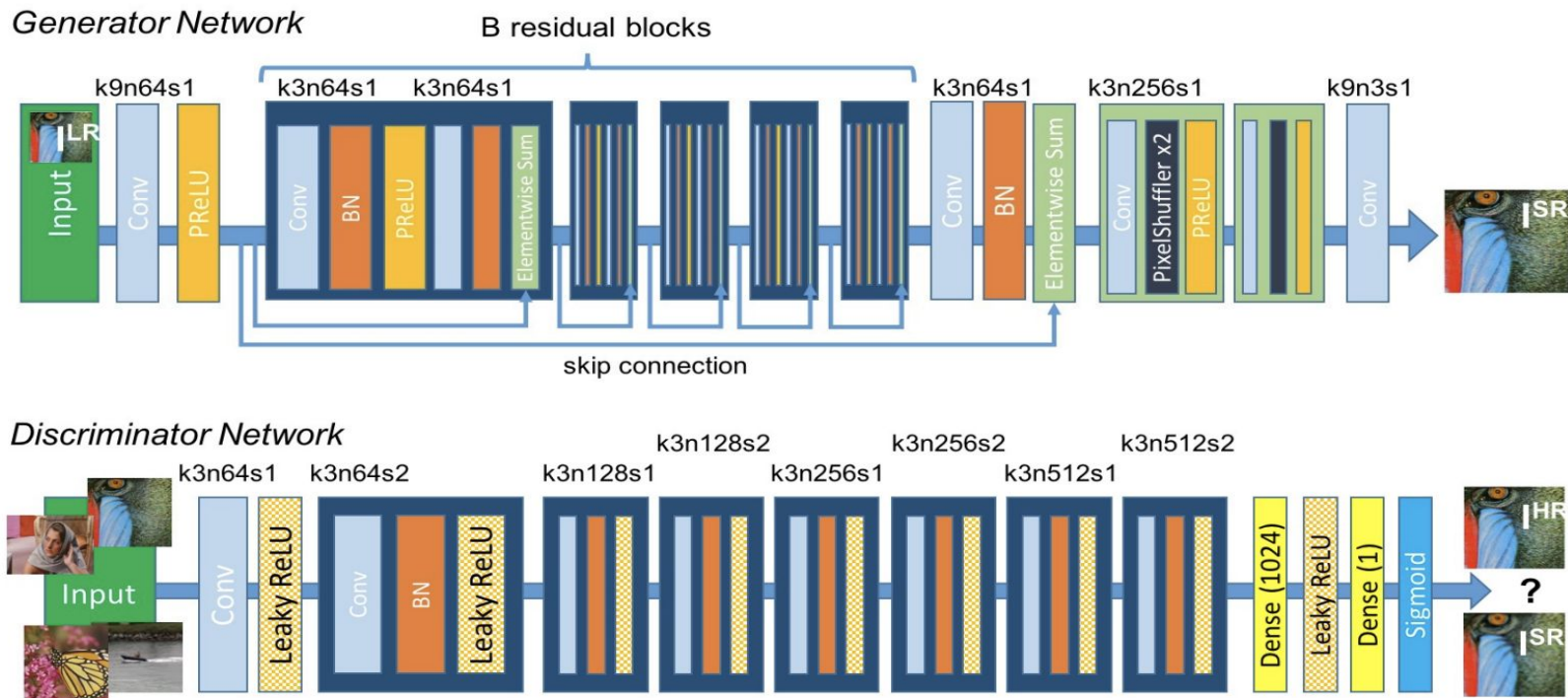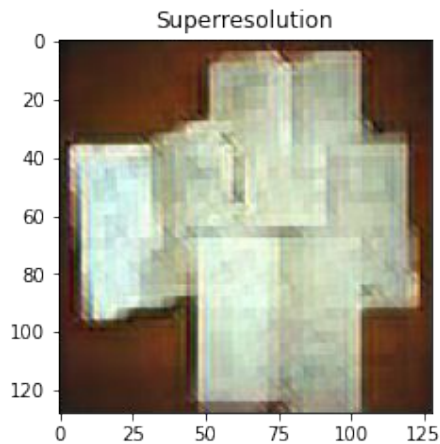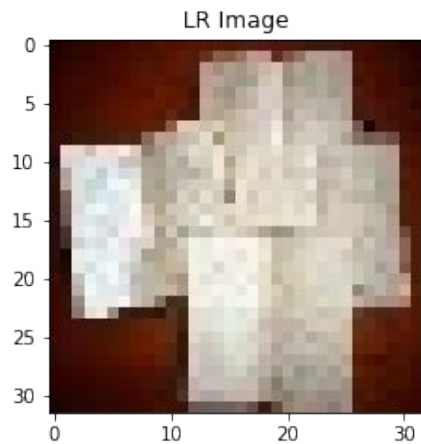- [GAN (Generative Adversarial Network)](#)
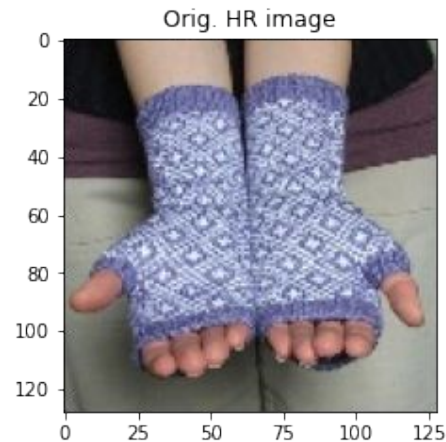- [ResNet](#)

Description

Figure 4: Architecture of Generator and Discriminator Network with corresponding kernel size (k), number of feature maps (n) and stride (s) indicated for each convolutional layer.
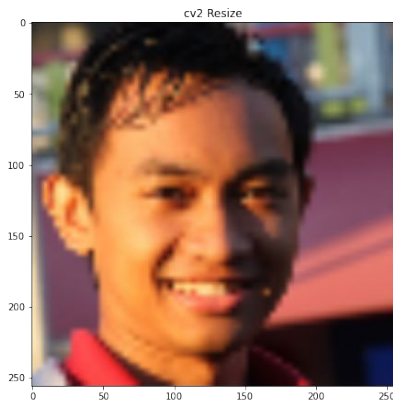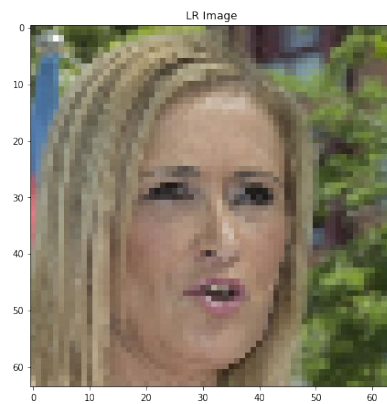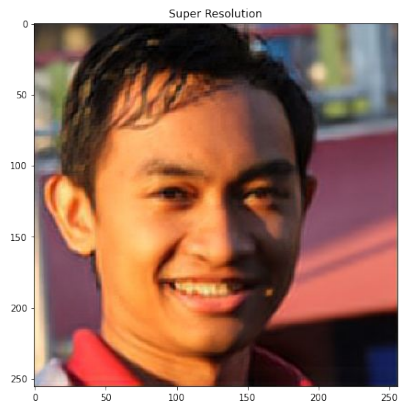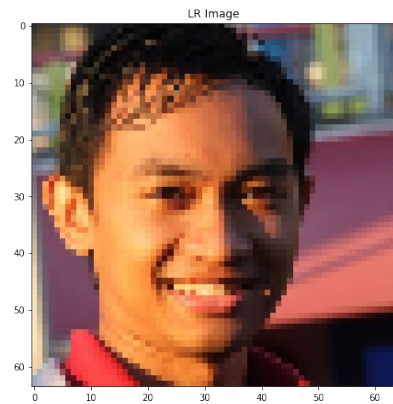
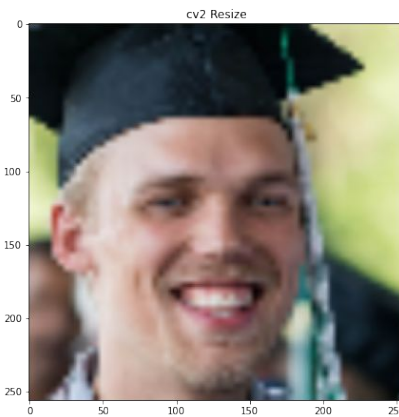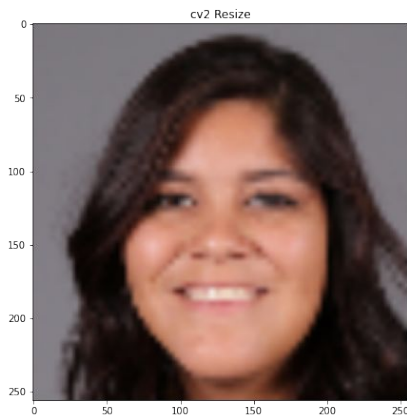Demo (first try)
(GAN 32x32 -> 128x128, 100 epochs)
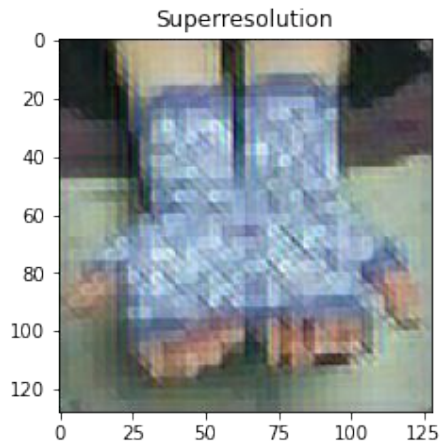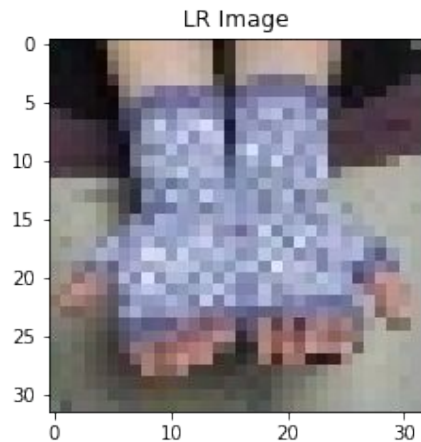
Demo
(GAN 64x64 -> 256x256, 200 epochs)
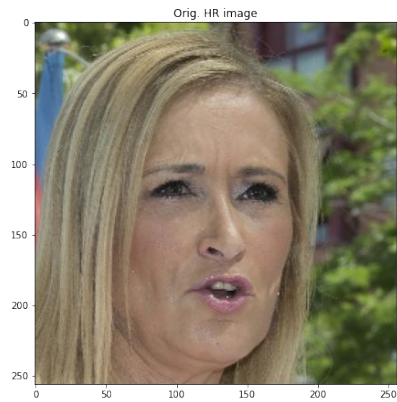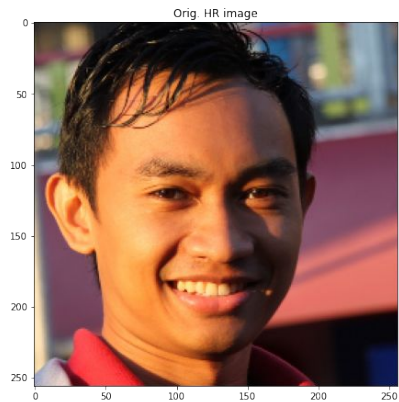
Demo
(Generator from GAN, 64x64 -> 256x256, 200 epochs)

Result

+   Looks not so bad after 200 epoch

+   Better than cv2.resize

-   Took a lot of time

-   Still not like original

-   Requires a lot of GPU and RAM memory

-   It is not possible for one GAN to use different extensions

Conclusions

- Train with more epochs
- Train with more data
- Trying apply GAN for video
- Using better resolution