**Title** – ESRGAN: Enhanced Super-Resolution generative adversarial networks

**Abstract** – SRGAN is capable of constructing real images with close textures and image quality. SRGAN has three key component features i.e. network architecture, adversarial loss, perceptual loss, these three components are improved in ESRGAN. They introduced RRDB with batch normalization. They borrow the idea from relativistic GAN for constructing better discriminator function.

**Introduction** – SISR is a fundamental LR problem, and many researchers contributed their work to make it better over the years. Various NN designs and training schemes have continuously improved the SISR performance, extra-ordinarily in PSNR.

**Literature Survey** – SR was introduced to favor the images that look more realistic and natural. One of the tasks was to generate visually pleasing images in SRGAN. There was a clear difference between SRGAN results and GT images, to understand the difference they restudied the key components of the SRGAN which improved the model in three aspects, they improved the network architecture by instigating RDDB, removed batch normalization and improved discriminator using Relativistic average GAN (RaGAN) which learn to judge “whether one image is more realistic than the other” rather than “whether one image is real or fake”. They also improved perceptual loss by using VGG feature before activation instead of after activation in SRGAN. They propose network interpolation which results in reconstruction style and smoothness.