**Title** - High-Resolution Image Inpainting using Multi-Scale Neural Patch Synthesis

**Abstract** – Recent research in deep learning shows better results in filling gaps and empty spaces in natural images with somewhat better textures and details. The only limitation being the memory limitation and difficulty in training. If larger images are used then, blurry spots and not so pleasing textures appear. They proposed a multi-scale neural patch synthesis approach based on joint optimization of image content and textures. They evaluated their results on ImageNet and Paris street view datasets and they achieved state-of-the-art inpainting accuracy.

**Introduction** – There are namely two problems that fall under hole-filling. First is the texture synthesis technique, and in second one hallucinated the mission image regions in a data-driven fashion. This approach is effective only when the image has sufficient visual similarity to the query.

**Literature Survey** – Over the years, improvement in CNN has bring great improvement in image classification performance. Deep Neural Network is often known for its generative performance. In recent years, an encoder-decoder network is invented for image inpainting, using the combination of loss and adversarial loss (content encoder). Neural Style transfer is used for constructing images by combining “style” of one and “texture” of another image into one image. Its performance can also be seen in creating fine textures and high-frequency details in natural images.