Dr. Prathap Soma

Research Project: 4K/8K image/video up-scaling using deep learning for image rendering applications.

This research aims to upscale the 2K resolution rendered image to 4K or 8K. Creating realistic or synthesized images from a description of a 3D virtual object (such as shape, attitude, material, or texture) and the lighting conditions of the surrounding scene is known as rendering. Production of rendering images with high quality at higher resolution is a time-consuming process. Therefore, researchers are focused on developing some machine learning algorithms (up-scaling) to escalate the low-resolution rendering images to high-resolution and quality. Nowadays, high-resolution display technology such as 4K or even 8K is quite impressive. However, rendering of 8K images will take a long time over 100 hours. But the rendering of 2K images is just about 10 hours. Therefore, there is a pressing need for an efficient upscaling technique to convert low-resolution (LR), low-quality images/videos (2K) to high-resolution (HR), high-quality images/videos(8K) using some auxiliary information of 2K. Firstly, I would like to design an algorithm for 4K/8K quality images(single frame), and then escalate it to videos(multi-frame).

Dr. Soma's Ph.D. was awarded by the department of Electronics and Communication Engineering from the National Institute of Technology Warangal, India.

Find out more about Dr. Soma's research and publications http://bit.ly/3Xk1xSA.