National Institute of Technology Rourkela

Departmental Seminar

Seminar Title	: Towards Single Sand-dust Image Restoration via Vision Transformer with Multi-Scale Feature Aggregation.
Speaker	: Romala Mishra
Supervisor	: Prof S K Dhara
Venue	: EC228, IPCV Lab
Date and Time	: 16 Jan 2025 (04.45PM)
Abstract	: “Sand-dust images contain suspended dust particles that degrade the image quality in terms of visibility and, illumination leading to hazy images, distorted depth perception, colour shifts, and wavelength scattering causing tints in images which impacts various vision-based tasks. Many existing Sand-dust restoration techniques struggle to preserve fine details during restoration and face difficulty in varying Sand-dust conditions. To address these challenges, we propose a vision transformer-based framework that employs shifted window attention and depth-wise convolution for efficient local attention computation. It incorporates layer normalization that is revised to enhance stability and is integrated with a multi-scale feature aggregation module that allows the framework to address varying levels of haze by balancing the extraction of global contextual information with the preservation of local details and reducing overhead computation. Overall, our framework is found to not only effectively restore varying Sand-dust conditions as compared to other state-of-the-art frameworks but also address colour shifts, colour tints, blurred images, distorted depth perception, and restores the fine details of the affected image.”