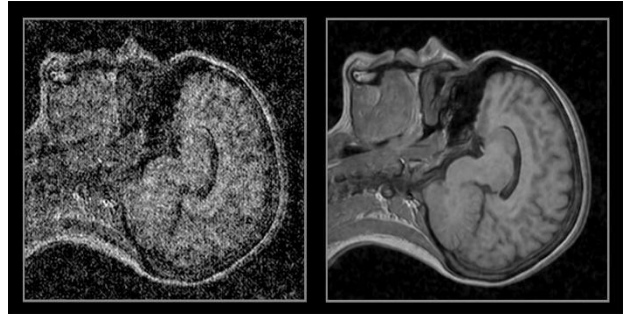


Title: Image Denoising using attention-based deep learning models

Abstract: The invention and ease of access to digital cameras have made digital images an integral part of our daily lives with applications almost in every field: medicine, remote sensing, autonomous vehicles, surveillance, satellite imagery, etcetera. In essence, the use of digital images is everywhere. However, when captured using cameras or other sensory devices, digital images contain unnecessary information called noise, which needs to be removed to enable the images for subsequent applications. Many factors, including low light conditions, transmission, or compression, introduce multiple types of noise like additive white Gaussian noise (AWGN), speckle noise, quantization noise, and impulse noise. Among these noises, AWGN is the most common occurring noise. Different deep learning models exist in the literature to address the denoising problem; however, none of them is successful in providing a comprehensive solution. Moreover, recently attention-based architecture has shown tremendous performance for sequence data, which have rarely been applied to image data. Therefore, in this study, we aim to study the performance of attention-based models for image denoising.



Data Availability: Data will be shared with the students who wish to conduct research in this domain.