

Hareesh Thuruthipilly (NCBJ), From DES to HSC: Identifying Low Surface Brightness Galaxies using Transfer Learning on Deep Abel 194 Cluster data

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Low surface brightness galaxies (LSBGs) are crucial for understanding galaxy evolution and cosmology, yet their physical properties remain elusive due to the challenges in detection. Future large-scale surveys, such as LSST and Euclid, will uncover many LSBGs, necessitating automated methods for identification. We explore transfer learning for detecting LSBGs by training eight transformer models on Dark Energy Survey (DES) data. These models were applied to Hyper Suprime-Cam (HSC) data of the deeper Abell 194 cluster, leading to the discovery of 171 LSBGs, with 87 being new. The models achieved a recall rate of 93

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