

Abstract Submitted
for the TSF17 Meeting of
The American Physical Society

Photometric Redshift Estimation of Astrophysical Objects Using Machine Learning NATHAN STEINLE, University of Texas at Dallas — Modern astronomical surveys produce copious amounts of data, so that effective tools to handle these datasets are increasingly valuable. To this end, machine learning techniques are finding their way into astronomy and astrophysics. For instance, well established classification schemes are improved by implementing machine learning methodology to separate stars from quasars, and other galaxies. Here, a Random Forest (RF) regression model is trained on the Sloan Digital Sky Survey DR12 to learn the relationships between the photometric magnitudes and the spectroscopic redshift. Then that trained RF is used to estimate photometric redshifts of objects for other surveys which provide appropriate photometry but no spectroscopy. The functionality and reliability of the photometric redshift predictor is demonstrated, and the value of this tool is explored in the context of future surveys.

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Date submitted: 19 Sep 2017

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