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Using Deep Neural Networks to Identify Transient Noise in Advanced LIGO Detectors SIDDHARTH SONI, Louisiana State University — Advanced LIGO data quality is adversely affected by short duration noise transients, also known as glitches. These glitches can be categorized into different classes based on their appearance in the time-frequency plane. This work is done by GravitySpy, a machine learning framework used for classifying transient noise at LIGO into separate classes. During the third Observing run, we noticed a new transient noise known as Fast Scattering, whose glitch morphology did not match with any of the existing glitch categories. Here I present my work on retraining the GravitySpy algorithm to recognize this new glitch category and the resulting improvement in our understanding of the transient noise.

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