

# Predicting Earthquake Damage

Applying Machine Learning to predict damage from the 2015  
Gorkha earthquake in Nepal

by

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## Abstract:

Predicting losses from natural hazard is crucial for both public and private agencies. The former, like planning authorities, need to implement damage reduction measures while the latter, like insurance companies, need to reliably assess risk premiums. This project aims at predicting earthquake damage from the 2015 Gorkha Nepali earthquake using one of the largest post-disaster datasets ever collected in the context of natural hazard risk assessment. The data were collected by the Kathmandu Living Labs and the Central Bureau of Statistics surveying 762.106 buildings affected by the earthquake. For each building, 42 features were collected, and each building is categorized per damage grade from 1 to 3, i.e. from low to damage to complete destruction. The goal is to build a machine learning algorithm which can predict buildings damage grades. This would allow to better prepare for the next earthquake. Raw data are available [here](#), and an [online competition](#) was also started on the same topic.