What caused the loss to the property?

Erool Palipane

Why

- Make Claims processing efficient
- Better identify the risk

Fire damaged

Earthquake damaged

good condition

Background

- Applying image recognition to insurance - Kailang Shang (Society of Actuaries) https://www.soa.org/globalassets/assets/Files/resources/research-report/2018/applying-image-recognition.pdf
- Automatic car damage recognition -Jeffrey de Deijn https://beta.vu.nl/nl/Images/stageverslag-deijn_tcm235-882561.pdf

How

- Scraped the internet from google image search and got the urls of images on losses due to fire, flood, earthquake and downloaded them. Also got images of property in good condition.
- Trained them using the fastai library which is run on top of pytorch using a resnet34 CNN model.
- Got accuracy of 60% initially, then after improving the search key words, improved it to 75% accuracy. After cleaning the data improved it to further 80%.
- Github new -https://github.com/eroolpal/detect_damagecause/blob/master/Copy_of_firefloodearthfraudnew.ipynb
- Github-https://github.com/eroolpal/detect_damagecause/blob/master/floodfireearthquake.ipynb

Future work

- Improve the accuracy of the model (using better search criteria?)
- Include other perils for example tornado losses, hurricane losses to the model
- Loss estimate once the cause of the damage is detected (If covered by the policy) (image segmentation?)