TEAM ID	PNT2022TMID24339
PROJECT NAME	NATURAL DISASTERS INTENSITY ANALYSIS AND CLASSIFICATION USING ARTIFICIAL INTELLIGENCE
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PROJECT FLOW

> Aerial imagery captured via unmanned aerial vehicles (UAVs) is playing an increasinglyimportant role in disaster response.

> Unlike satellite imagery, aerial imagery can be captured and processed within hours ratherthan days.

> In addition, the spatial resolution of aerial imagery is an order of magnitude higher theimagery produced by the most sophisticated commercial satellites today.

> Both the United States Federal Emergency Management Agency (FEMA) and the EuropeanCommission's Joint Research Center (JRC) have noted that aerial imagery will inevitably present a big data challenge.

> The purpose of this article is to get ahead of this future challenge by proposing a hybrid crowd sourcing and real-time machine learning solution to rapidly process large volumes ofaerial data for disaster response in a time-sensitive manner.

> Crowdsourcing can be used to annotate features of interest in aerial images (such asdamaged shelters and roads blocked by debris).

> These human-annotated features can then be used to train a supervised machine learningsystem to learn to recognize such features in new unseen images.

> In this article, we describe how this hybrid solution for image analysis can be implementedas a module (i.e., Aerial Clicker) to extend an existing platform called Artificial Intelligence for Disaster Response (AIDR), which has already been deployed to classify microblog messages during disasters using its Text Clicker module and in response to Cyclone Pam, acategory 5 cyclone that devastated Vanuatu in March 2015.

> The hybrid solution we present can be applied to both aerial and satellite imagery and hasapplications beyond disaster response such as wildlife protection, human rights, and archeological exploration.

Collection parameters (e.g. keywords, geographical regions; categories against which to classify items)

Operator

Labelers

Task   Label

Crowdsourcing   Labels

Learner

Model

Items

Query

Items

Collector

Unlabeled items

Tagger

Classified Items

Datasources

Output