**Automating Natural Terrain Landslide Identification in Hong Kong**

Haojie Wang and Limin Zhang (HKUST)

A landslide is the movement of a mass of rock, debris, or earth(soil) down a slope. As a common natural hazard, it can lead to significant losses of human lives and properties.

Hong Kong, one of the hilly and densely populated cities in the world, is frequently affected by extreme rainstorms, making it highly susceptible to rain-induced natural terrain landslides (Fig. 1). Generating a complete landslide inventory that records historical landslide events is a first step to mitigate the landslide risk posed to the community. A high-quality landslide inventory is indispensable not only for landslide hazard and risk analyses, but also for supporting landslide hazard mitigation and prevention decisions of the government.

A picture containing mountain, nature, outdoor, ravine

Description automatically generated

Fig. 1 Natural terrain landslides near Tai O, Hong Kong in June 2008 (Photo credit: Civil Engineering and Development Department of Hong Kong Government)

The common practice of identifying landslides is visual interpretation which, however, is labor-intensive and time-consuming. Thus, this hack will focus on automating the landslide identification process using artificial intelligence techniques, and target at using high-resolution terrain information to perform the terrain-based landslide identification. Other auxiliary data such as the lithology of the surface materials and rainfall intensification factor are also provided.

Please see the data dictionary file for more information about the data.

**File list:**

Case description.docx – This file.

Data dictionary.docx – Dictionary file that introduces features in the dataset

Train.csv – Training data with label (provide to the students)

Test.csv – Testing data without label (provide to the students)

Test with label.csv – Testing data with label (confidential, keep to the UN team)

Sample submission.csv – Sample submission (provide to the students)