NANYANG TECHNOLOGICAL UNIVERSITY SINGAPORE

Institute of Catastrophe Risk Management

Harvesting Loss and Damage Information of Disasters by Automated Analytics of Online News

Assoc/Prof Mao Kezhi
Li Qi

Objectives

Studies show that online news and social media contain rich information of loss and damage caused by natural disasters such as earthquake, typhoon, and flooding. This project aims to build an automated online news analytics system that could provide quick information of loss and damage for effective risk management. The system is built upon AI technologies including machine learning and natural language processing (NLP).

System Architecture

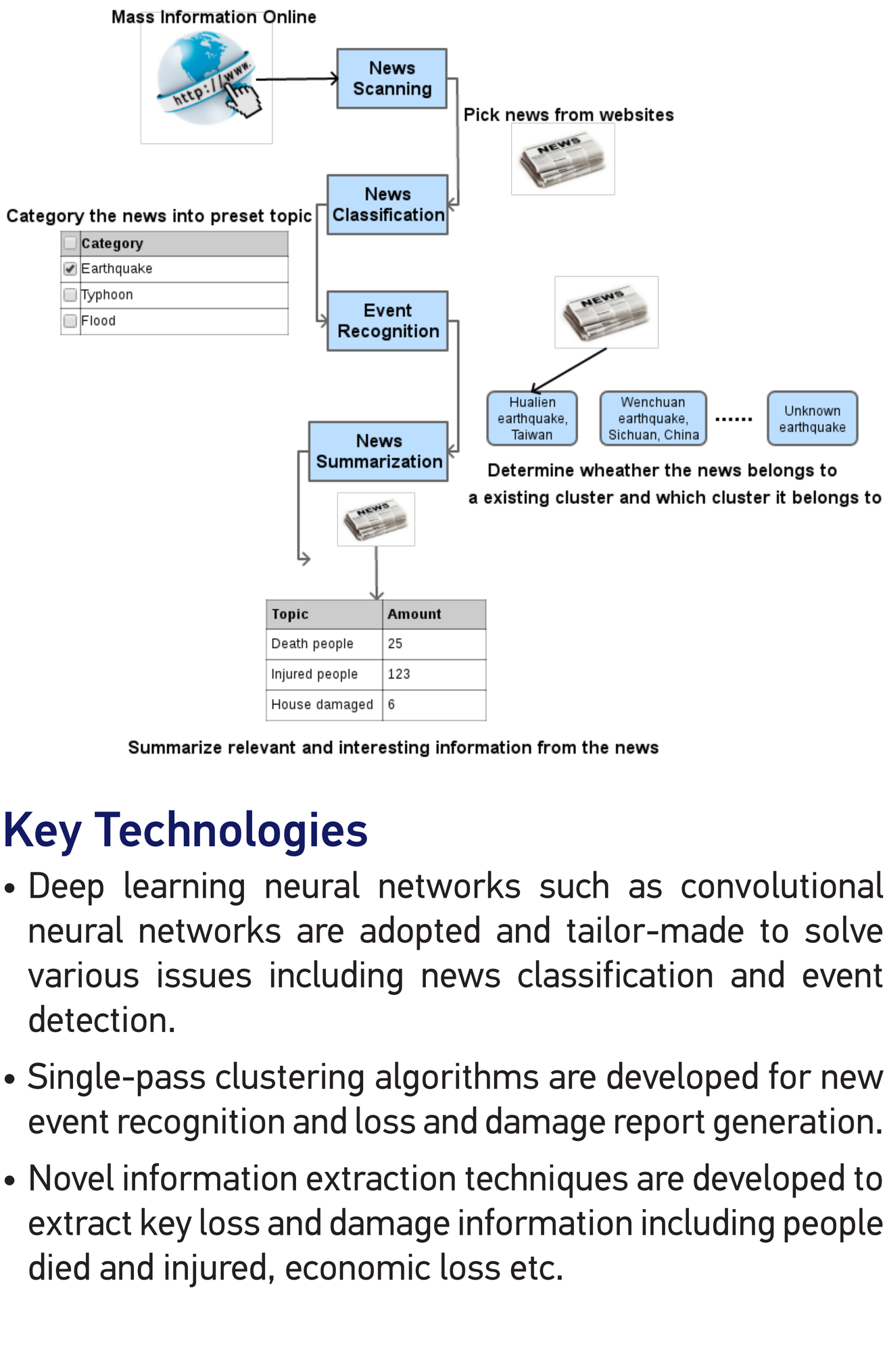
This system consists of a few components including news scanning, news classification, event recognition and news summarization.

- News Scanning
  - Goals: crawl the lastest news
  - Method: monitor major news agency websites and download the newest news

- News Classification
  - Goals: categorize news articles into several pre-defined topics automatically
  - Method: text classification

- Event Recognition
  - Goals: determine whether a news article is about a new event or an existing event
  - Method: single-pass clustering

- News Summarization
  - Goals: summarize the information of interest underlying news articles of an event
  - Method: pattern classification and clustering



Key Technologies

- Deep learning neural networks such as convolutional neural networks are adopted and tailor-made to solve various issues including news classification and event detection.
- Single-pass clustering algorithms are developed for new event recognition and loss and damage report generation.
- Novel information extraction techniques are developed to extract key loss and damage information including people died and injured, economic loss etc.

Contact Us:
Executive Director, ICRM (ExecDir-ICRM@ntu.edu.sg)
N1-B1b-07, 50 Nanyang Avenue, Singapore 639798
Tel: +65 6592 1866 Website: http://icrm.ntu.edu.sg