災防數據與機器學習整合應用開發

Application of Combing Social Media and Machine Learning

國家災害防救科技中心

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摘要

　　本計畫以國家災害防救科技中心(以下簡稱災防科技中心)於災害應變期間實行之社群網路蒐整流程為基礎，佐以統計、文字探勘、影像辨識等技術，進行資料分析與加值應用。在災害發生期間，判斷社群網路上民眾發布的文字訊息，是否包含災點資訊，利用訊息中的文字提取地名、地標等地理空間詞彙進行輔助定位；災情照片透過影像辨識技術，以辨識常見商店招牌為對象，輔助空間定位分析，相關定位結果可與文字定位結果進行交叉比對，提升災情訊息的可信度，以及災害位置的精確度。結合地理定位、透過電子地圖之展示，建立輔助性觀測模型，呈現時空間輿論災情分布，作為觀察災情趨勢的參考依據。

關鍵詞：文字探勘、機器學習、圖形辨識、地理資訊系統、社群網路。

Abstract

　　This project is based on the social network search process implemented by the National Science and Technology Center for Disaster Reduction (NCDR) during the disaster response period, supplemented by statistics, text mining, image recognition and other technologies for data analysis and Value-added application. During the disaster, determine whether the text messages posted by people on the social network contain location information. Our goal is to extract geographic spatial words such as location names and landmarks from those messages. Besides, photos will be identified after using image recognition technology. The signboard is the object to assist spatial positioning analysis, and the relevant positioning results can be cross-compared with the text positioning results to improve the reliability of the information and the accuracy of the location. Combining geographic positioning and displaying through electronic maps, an observation model is established to present the distribution of public opinion in time and space as a reference for observing disaster trends.

Keywords：text mining, machine learning, image recognition, GIS, social network