

基於 LINE 對話機器人之災情蒐整研究

Research of LINE Chatbot on Disaster information Aggregation

國家災害防救科技中心

佐理研究員

蔣佳峰

Chia-Feng Chiang

摘要

AI 科技已愈發進步，從以往的人工智慧、深度學習到時下的生成式 AI，電腦已具備相當學習能力，支援人類處理繁瑣的任務，如文章翻譯、對話聊天、文字處理等工作，在本中心致力研究於社群資料之蒐整任務上，亦獲得助力，於句子中自動化辨識災情地點、災情敘述之精準度上獲得顯著提升，因此，我們將更進一步在災情蒐整上深化其應用性。

我們選用 LINE 作為傳遞管道、建置聊天機器人，透過對話方式接收使用者輸入的災情資訊，並事先透過 OPENAI 訓練判讀地理描述、災情描述之模型，依照性質建立兩種蒐集災情的對話模式：群組型與一對一型，在大量蒐集災情時，使用一對一型，輸入災情格式較為不拘，回報上相對迅速；需要精準蒐集災情則使用群組型，需依照機器人提示依序輸入資訊，回報時間較長、但資料較為準確。

此研究使用 0403 地震事件做為案例分析，透過社群軟體 LINE 對話機器人作為管道，提供使用者以對話方式進行災情通報，提供文字、圖片與影片之災情資訊，使用透過 OPENAI 預先建立之文字辨識模型，快速判讀地理詞與災情敘述，蒐整資訊後於機器人後台補上其 GPS 資訊，並呈現於儀表板當中，以回報時間當下為發生時間，評估整體事件之時空間影響。

關鍵詞：社群網路，地理資訊系統，災情資訊，對話機器人，生成式 AI

回報日期區間：

2024/05/20 11:00

2024/05/23 11:00

查詢

+ 匯出勾選CSV

總計 8 則 · 待閱 6 則 · 已閱 2 則

回報群組名稱 回報序號	使用者姓名	災情描述	訊息時間	災情日期	災害地點 經緯度	災情縣市	檔案	功能
<div><input type="checkbox"/></div> <div>災情回報測試群組 509249512759099397</div>	<div></div> <div>佳峰</div>	可能山崩 目前暫無法 到現場	2024/05/22 16:47:48	2024/04/03	秀林鄉 121.537 24.225858	花蓮縣	<div></div>	<div>備註</div> <div>通報確認</div>
<div><input type="checkbox"/></div> <div>災情回報測試群組 509248928273924386</div>	<div></div> <div>佳峰</div>	水管爆裂	2024/05/22 16:41:59	2024/04/03	開廟區中正 路與南雄路 口 121.454698 24.022523	臺南市	<div></div>	<div>備註</div> <div>已閱 · 要 通報</div>



Abstract

AI Technology has developed significantly, including traditional artificial intelligence , deep learning and current generative AI. Computers now possess substantial learning capabilities, supporting humans in handling tedious tasks such as article translation, conversational chat, and text processing. We dedicated to the aggregation of social information, these advancements have greatly assisted us. Specifically, automatically identifying of disaster locations and descriptions within sentences could be improved. Consequently, we aim to further enhance its applicability in disaster data aggregation.

We choose LINE as our communication platform and developed a chatbot to receive disaster information from users through dialogue. With models trained via OpenAI, which interpret geographical and disaster descriptions, we have established two types of conversation modes for collecting disaster information: group-based and one-to-one. For extensive data collection, the one-to-one mode allows flexible input of disaster information for quicker reporting. For precise data gathering, the group-based mode requires sequential input as prompted by the bot, resulting in longer reporting times but more accurate.

We've used the earthquake event on April 3rd,2024 as the case study. Through the LINE chatbot, users report news through dialogue, providing textual, pictorial, and video-based disaster information. Utilizing pre-established text recognition models from OpenAI enables rapid identification of geographical terms and disaster descriptions. After aggregating information, GPS data is appended in the bot's backend and displayed on a dashboard, timestamped from the reporting time as the occurrence time, evaluating the spatiotemporal impact of the entire event.

Keywords : Social Networks , GIS , Disaster information , Chatbot , Generative AI