

# 108 年智慧應答機器人研發

## 2019 Development of Intelligence Response Robot

主管單位：經濟部水利署

蔡孟涵<sup>1</sup>                      蔡芸琇<sup>2</sup>                      楊亦東<sup>1</sup>  
 Tsai, Meng-Han              Tsai, Yun-Cheng              Yang, I-Tung  
 莊子毅<sup>1</sup>                      邱睿宏<sup>3</sup>  
 Chuang, Tzu-Yi              Ciou, Ruei-Hong

<sup>1</sup> 國立臺灣科技大學營建工程系

<sup>2</sup> 東吳大學巨量資料管理學院

<sup>3</sup> 酷必資訊股份有限公司

### 摘要

「108 年智慧應答機器人研發」計畫延續 107 年之開發成果及經驗，以水利防災專業人員為目標使用者，發展智慧應答機器人，透過輸入文字或點擊按鈕的方式，使用者可取得防災所需的資料。本計畫執行五大工作項目的系統研發及專業服務，包含：(1) 資料盤點及更新：完成資料庫盤點，涵蓋氣象、整備、應變、復原、其他、意見回饋等六大類 318 項資訊，及完成 25 筆靜態防災資料與 29 張表格圖片之更新。(2) 系統維運及應用探討：定期更新與測試智慧應答機器人之平台及系統，已確保正常運作。並亦每週提供使用者行為之資料，做為調整及更新智慧應答機器人系統之參考。(3) 精進研發：規劃管理後台，並研發分眾通報功能及設計客製化選單原型。(4) 智慧應答機制研發：研發對話管理模組進行查找任務進度管控的功能，及具備容錯之功能，另已依據所有歷史的對話記錄資料，解析出 622 組關於防汛應變之詞彙，作為擴充資料庫之參考。(5) 協助辦理教育訓練：完成協助辦理 7 場次教育訓練辦理及完成問卷統計。

**關鍵詞：**應答機器人、決策系統、語意分析

### Abstract

"2019 Development of Intelligence Response Robot" continues the development achievements and experience of 2018, and implements system development and professional services for five major topics, including: (1) Intelligent disaster prevention response robot data inventory and update: the inventory of the flood prevention response database has been completed, including 318 items of information divided into six groups such as weather, prepare, response, recovery, other, and feedback. 25 static images and 29 tables have also been updated. (2) Smart disaster prevention response robot maintenance and application exploration: the platform and system of the smart disaster prevention response robot have been regularly updated and tested, and the operation normally has been ensured. Information

on user behavior is also provided weekly as a reference for adjusting and updating the response robot system. (3) Research and development of intelligent disaster prevention response robots: we have planned the managed back-end system. Through actual operation and adjustment, the robot can actively provide different flood prevention response information according to different requirements. (4) Research and development of intelligent response mechanisms for intelligent disaster prevention response robots: the dialogue management module have been developed to perform the function of finding and controlling the progress of the task, and the module has the function of fault tolerance. We also analyzed 622 sets of vocabulary about flood prevention based on all historical dialogues as a reference for expanding the database. (5) Assistance in training: we have completed the assistance of 7 sessions of education and training and completed the questionnaire statistics.

**Keywords : Intelligence Response Robot, decision system, semantic analysis.**