

組別 Team ID : 202202

專題屬性 Category : AIoT 應用 (AIoT Applications)

專題名稱 Project : Eyelderly Care 智慧居家監控 (Eyelderly Care)

一、指導老師 Advisor : 李朱慧老師 (Prof. Chu-Hui, Lee)

二、組員 Team members : 簡呈佑 (10814161)、葉哲丞 (10814032)、

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三、系統環境 System environment :

(一) 軟體 Software :

作業系統 Operating System : Linux, Windows

語言 Programming language : Python, Dart

開發工具 Toolkits : Visual Studio Code, Android Studio

深度學習框架 Deep Learning Framework : PyTorch, TensorFlow

使用者介面框架 UI Framework : Flutter

(二) 硬體 Hardware :

Raspberry Pi (With Compute Module)

四、簡介 :

(一) 系統簡述

針對長者獨居在家的情況，團隊使用深度學習模型判斷相機捕捉的影像，設計出一套用藥提醒功能，藉由記錄長者的用餐、服藥情形，在未正確用藥時發出提醒。以及在危險時刻發出警告，例如跌倒偵測、火災提醒、用火提醒（未關閉瓦斯爐）、可疑人逗留等。

(二) 特色

- 準確地用藥提醒：藉由偵測用餐的時間，以及使用者自行選擇吃藥週期，達到更準確地提醒。
- 場景廣泛的硬體感應設備：藉由深度學習的輔助，不需要為了單一功能而增加各種硬體感應設備。
- 隱私安全：資料全程在本地設備運算、儲存。
- 不間斷執行：該系統可以 24 小時持續運作，並在發生危險時自動發出通知。

五、Introduction :

Introduction

For the solitary elderly, Our team used a deep learning model to judge the image captured by the camera, develop medication reminder system, record elderly meals and take medicine, and remind them when medication is not taken correctly.



And also warning some dangers, such as falling detection, fire disaster warning, cooking fire warning and suspicious person warning, etc.

#### Features

- Accurate medication reminder : By detecting the dining time, and the user choosing the medication cycle, to achieve more accurately remind.
- Hardware sensing devices with a wide range of usage scenarios : With the help of deep learning, there is no need to add various hardware sensing devices for a single function.
- Privacy security : The data is calculated and stored on the local device throughout the entire process.
- Uninterrupted Execution : The system operates 24/7 and automatically notify in the event of danger.