基於影像辨識為基礎之陸蟹防護系統開發

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摘　　要　台灣四面環海具有豐富的海岸林樣貌與濕地生態鏈，其中維持樣貌的豐富性及提升生物的多樣性，陸蟹扮演極重要的角色，此外牠也能加速自然界中的物質分解，使自然資源更快循環到生態系統中，促進陸地、濕地及海洋間的永續發展。在台灣墾丁、綠島和小琉球等地區為陸蟹的主要棲息地，每年 6 月至 11 月為陸蟹繁殖期，同時也正值台灣民眾至該些區域旅遊的旺季。平常陸蟹群居於陸地的海岸林中，每當一到繁殖期就會因習性關係趕在日落後回到大海繁殖，遷徙過程中常有無數陸蟹死於車輪之下，交通道路儼然已成為陸蟹最大的隱形殺手。本論文將使用 TensorFlow，提出基於影像辨識中的分類檢測，辨識目標影像中的物件，只要有陸蟹出沒在攝影機的範圍中，即透過樹莓派發布警告訊息至 LED 燈板中警示用路人。

關鍵詞：陸蟹、繁殖、影像辨識、圖像分類。

Development of land crab protection system based on image recognition

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ABSTRACT Taiwan is surrounded by the sea with abundant coastal forest appearance and wetland ecological chain. Among them, the land crab plays a very important role in maintaining the richness of the appearance and enhancing the biodiversity. Natural resources are recycled into ecosystems faster, promoting sustainable development between land, wetlands and oceans. The main habitats of land crabs are in Kenting, Green Island and Xiaoliuqiu in Taiwan. The breeding season of land crabs is from June to November every year, and it is also the peak season for Taiwanese to travel to these areas. Usually land crabs live in groups in the coastal forests on land. Whenever the breeding season comes, they will rush back to the sea after sunset to breed due to their habits. During the migration process, countless land crabs often die under the wheels, and the traffic road has become a landslide. Crab's biggest invisible killer. This paper will use TensorFlow to propose classification detection based on image recognition to identify objects in the target image. As long as there are land crabs in the range of the camera, a warning message will be issued to the LED light board to warn passersby through the Raspberry Pi.

Key Words: Land Crab, Reproduction, Image Recognition, Image Classification.

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