Raspberry Pi-based system accurate for detecting facial palsy

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A Raspberry Pi device with a digital camera and a deep learning

algorithm can detect facial palsy (FP) with high accuracy, according to a study recently published in *BioMedInformatics*.

Noting that deep learning is the best solution for detecting FP in real time with high accuracy, Ali Saber Amsalam, from Middle Technical University in Baghdad, Iraq, and colleagues used a Raspberry Pi device with a digital camera and a deep learning algorithm to propose a real-time detection system for FP and for determining a patient's gender and age.

The researchers found that the proposed solution facilitates diagnosis for both doctors and patients and could form part of a medical assessment. The study achieved an accuracy of 98 percent using a dataset of 20,600 images, including 19,000 normal images and 1,600 FP images.

"The diagnostic accuracy of the proposed system reached 98 percent," the authors write. "It is suggested as an auxiliary medical diagnostic tool for doctors, nursing staff, and patients. The patient's use of this system at home in the diagnostic process reduces embarrassment, effort, time, and cost. Further work is ongoing to develop the system to diagnose more conditions."

More information: Ali Saber Amsalam et al, Automatic Facial Palsy, Age and Gender Detection Using a Raspberry Pi, *BioMedInformatics* (2023). DOI: 10.3390/biomedinformatics3020031

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