GEORGE MASON UNIVERSITY®

Accurate Medication Identification – Pill Shape Identifier

The ubiquity of smart phones and high-quality cameras allows users to take pictures effortlessly. This pill shape identification method uses pictures from commodity cameras to accurately determine medication type while outperforming all other existing approaches to pill shape classification.

Problem:

Prescription drug use and misuse is on the rise globally. Frequently, incorrect medications are prescribed due to poor communication between health care officials and patients. In retail and illicit drug markets, pills of all sorts are marketed without accurate methods to identify real versus imposter pills.

Solution:

This innovation allows pills to be identified by anyone with need to accurately identify medication types by pill shape.

The Human-Machine Hybrid pill shape classification system uses:
- An imaging device for generating pill images (camera)
- A computer system for receiving and processing pill images
- A machine learning model to identify and classify pill shapes
- An output device for providing users with pill shape classification

Advantages:

- Use of straightforward metrics, such as area, simplifies model interpretation and use
- The model features conversion of multinomial problems into binary, simplifying its operation
- This method is easily scalable for use in a variety of settings