IdentiCan: The App That Detects Brain, Breast, Lung, Skin, and Pancreatic Cancer

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Cancer is a problem that is affecting millions of people worldwide, and it is one of the leading causes of deaths in the U.S. With the increasing number of cancer cases, there's a higher number of false-negative and false-positive rates in the diagnosis of the type of cancer a patient has. Due to this, we have created an app, IdentiCan, that can help diagnose a person with breast, lung, and skin cancer. On the doctor side of our app, the doctor can use a compact calculator to help diagnose the patient, along with a page to upload CT, MRI, or x-ray scans to be put through image classification. Using sound classification, image classification, the Fourier transform algorithms, fractal geometry algorithms, and self-assessments in our app, we are able to 94.3% confidently diagnose a patient screening themselves with one of these cancers. Using special algorithms and analysis, we provide information about a treatment plan specialized for the user, and we have a messaging platform where the user can reach out to either a patient or doctor for reminders, updates, and more. We also contacted doctors and professionals to gain more knowledge in this area. To train our machine, we used approximately 500 pictures in each class, meaning around 8,000 pictures per type of cancer. After 246 trials, the machine was able to 99.6% accurately identify whether the scan shows a cancerous tumor and what specific type of cancer the image is showing.

Awards Won:
Third Award of $1,000
Mary Kay Inc.: First Prize