Pill-Identification

Rose Perrone, Kevin Nam Truong, Artem Vasilyev

We're solving the problem of identifying a perscription pill by image from an iPhone.

We're working with a San Francisco startup called Iodine (see iodine.com). Iodine is working on new interfaces for presenting drug information. Matt, my (Rose's) advisor in the company worked at Google for the last decade, working on Search and Flu Trends. The rest of the team is made up of an MD, two MPH's, a former excecutive editor of WIRED, and a couple designers. Their mission is to help people make better decisions about their drugs. For example, people usually go to drugs.com, webMD, or random blogs to find information about perscription pills, and half the time, their unsatisfied.

Iodine found, after speaking with doctors, care-takers, and pharmicists, that there's a need for an app that can identify a pill by image. For example, a care-taker finds that an old person has a pillbox of pills, but they don't know what they are. Existing pill-identification apps require you to select dropdowns to identify the shape, color, and enscription, or place the pill on a certain background, and we think this extra work is too much friction.

Iodine has begun this project, using a simple color detector, shape detector, neural net (https://github.com/rjpower/fastnet), and feeding the outputs to a decision tree. We'll be working on improving the algorithms. We'll report a baseline of the app's performance, make clear what improvements we make, and then report the improved app's improved performance.

The current code is server-side, but it's possible to run the identifier on mobile instead. The interesting interplay between the algorithm and the phone could be that we may need to use the camera's torch to help reduces errors caused by shadows.

The target mobile platform is iOS.

Milestones

- May 20 - Improved color detector
- May 25 - Improved shape detector
- May 29 - Improved use of the open-source neural net
- May 31 - Ensemble the output of the detectors
- June 1 - Put together a presentation