Beer Auto Recognition System

Requirements

Subject : 창의 ICT 소프트웨어 공학

Professor : 송인식 교수님

Team member : 20134595 박창준
20153734 이정민
20155434 김청빈
20152577 서재훈
20125148 황현제

1. Product description

Beer Auto Recognition System(BARS) is a mobile application that will help you search beers that you've never seen before.
Every Beer has its's distinct label that differentiates it from others.
If you see a beer that you've never seen before or not familiar, take a photo of it's label with your phone camera and upload it at BARS application.
When the photo is uploaded, BARS program will operate through Image-Classification-Model based on deep-learning and find a match with the product on our database.
When it is matched, information about beer comes up at the screen including the name, manufacturer, ABV(alcohol), type, avg.price, style, ratings.
To make the features more reliable, we will refer to the data on worldwide famous beer information websites such as 'www.ratebeer.com' or 'www.beeradvocate.com'.
For maintenance, continuous interest to new beer products is required.

after process

Great Lakes Conway's Irish Ale

Style Irish Ale
Brewed by Great Lakes Brewing (Ohio)
Cleveland, Ohio

Overall
65
97
Style

3.33/5
590 Ratings

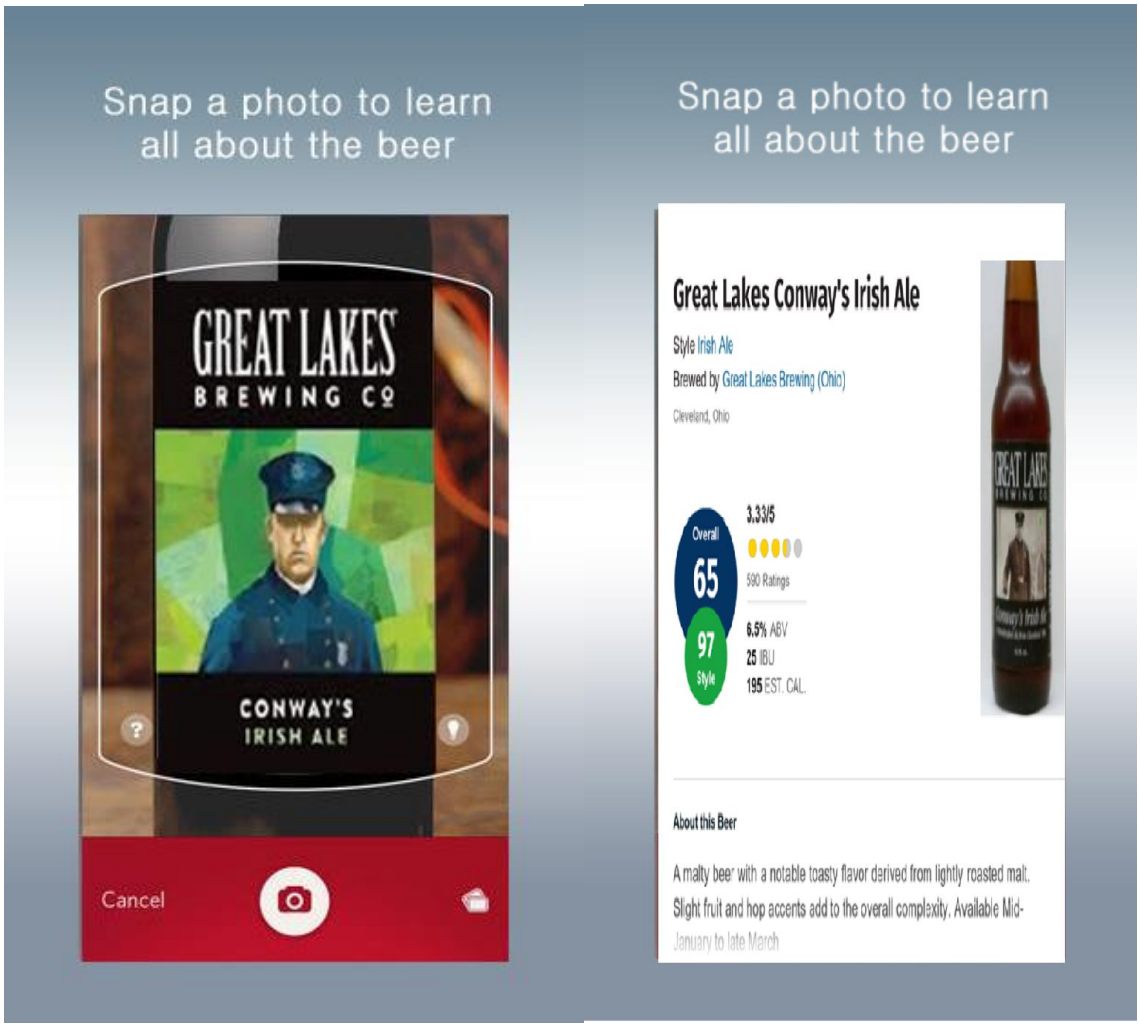
6.5% ABV
25 IBU
195 EST. CAL.

About this Beer

A malty beer with a notable toasty flavor derived from lightly roasted malt. Slight fruit and hop accents add to the overall complexity. Available Mid-January to late March

Read More

2. UI diagrams



3. Use case

Case1)

You went to a convenience store to grab some beers to drink. You are fed up with Korean beers that you've been drinking for years. Just then, you notice that there are lots of imported beers that you've never drank before. There are too many choices and it's even hard to read the label because it's written in foreign language. At the time you run the BARS app and take some photos of those beers and upload it. Now, You have all the info about those beers which will make you a smart consumer.
Enjoy the beer!

Case2)

You are a traveller visiting Korea. You wonder how the Korean beer will taste like. It's seems like "Hite beer" and "Cass Beer" is the most famous beer in Korea. Take photos of two beers. upload it on the BARS app. You notice that the rating of those two beers are pretty low. You put those beers back on the shell and take some more photos of Korean beer. After a while, you find a beer with rather high rating. Grab it and enjoy it.

Case3) You visited your friend's house. He brought two bottles of foreign beer. He said grab one you like. You take photos of two beers and upload it on BARS app. Blue label beer is IPA beer which you prefer the most. Grab the beer and enjoy it.

4. Process description

	April					May			June		
	1	2	3	4	5	6	7	8	9	10	11
Collect Related Data											
Structure Design											
UI Design											
Construct Server & DB											
Design Program Algorithm											
Develop Application											
Interlock with Server											
Final Demo & Test											

Risk Summary

Classification of beer is operated through Image-Classification-Model based on deep-learning. We will use Pytorch framework for data-learning. Since there is no pre-built data, the primary task is to collect data for deep-learning.
First of all, we will crawl image data by using 'Selenium' and 'Beautiful soup' Library. Then, will take extra photos by ourselves in case we might need more photo data for deep-learning. However, we might not be able to accumulate data sufficiently. Thus, relatively low image recognition rate would be inevitable. Therefore we might have to limit the number of beer so that we can successfully identify.
And also, slight downsizing of image-classification-model while transparenting it to a mobile device will be inevitable. It might lead to an additional reduction of recognition rate and processing speed. If this problem doesn't resolve while testing, we will have to use extra server to process the image recognition.

5. Team Website

https://github.com/minlee077/BARS