**Deep-Learning based Ingredient Recognition**

**Deep Learning Systems (ENGR - E533)**

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**Description:**

Whenever we go to a different place and want to try out the local cuisine, any vegan person would want to know whether the dish contains any dairy or meat, or if the person is health conscious, he/she would like to know the amount of calories present in that dish. We can solve this problem by identifying the ingredients present in the dish and further telling whether all ingredients are vegan-friendly and, also telling if the dish is has high amount of calorie or not.

**Problem Statement:**

Develop DCNN models like AlexNet and VGG for food category and ingredient categorization based on [110,421 food images](http://vireo.cs.cityu.edu.hk/VireoFood172/)

**Milestones:**

1. Classifying dishes into given food categories
2. Ingredient Categorization
3. Detecting if ingredients are Vegan / Non-vegan
4. Giving Calorie Value category (low, medium, high)

Dataset:

VIREO Food-172: <http://vireo.cs.cityu.edu.hk/VireoFood172/>

Food APIs to retrieve nutrition values:

<https://spoonacular.com/food-api>

Website allowed to be scraped to check if the ingredient is vegan-friendly:

<http://www.veganpeace.com/ingredients/ingredients.htm>

References:

<http://vireo.cs.cityu.edu.hk/jingjing/papers/chen2016deep.pdf>

<https://github.com/gabrielilharco/snap-n-eat>