**Team 8 - ALCOVE - Attention to the right details with detailed attention.**

Heena Khan, James Phillips, Luis Chunga, Elijah Barbour, Mason Thieman, Matthew Radice, Steven Sheffey

Image Recognition Software for a Web App

# Introduction and Background

Students at MTSU developed a free food-finding app during HackMT where anybody can search for free food around them just by entering their location, and anybody can donate their food just by filling in information about the food type and quantity they are offering. Currently, the food donor must fill this information every time they are hosting food. We are going to incorporate an image recognition neural network into this web app to determine the food information automatically from pictures.

## Motivation

In order to reduce the amount of work required to donate food, we will be implementing a Neural Network to automatically identify the donor’s food through a picture. Not only will this project reduce the work required to donate food on the app, it will also reduce the amount of mislabeling errors. This will not only be more convenient for the donor, but also will be more convenient for the organization taking the food. In implementing this Neural Network into the app, we prevent food wastage and help provide food to someone who needs it without paying for it. The image recognition feature will add great value to the app.

## Reference Related Work on Similar Problems or that has used similar approaches

We researched a similar project named “Food-101; Mining Discriminative Components with Random Forests”. This project focused on creating a Neural Network that helps organize and classify different types of food. Although their project objective is like our objective, the method of attack is vastly different. In that project, the objective was achieved by using a Random Forest Neural Network. Our approach will be with a Convolutional Neural Network. We are referring to the research made in that project to help progress further with ours.

## Our Main Objective

We are planning on building a Convolutional Neural Network (CNN) using TensorFlow to classify images. CNNs are efficient in correlating and understanding a large amount of data in high-resolution images, and they are best known for their ability to recognize patterns present in images. The goal is to train a CNN to be as accurate as possible in identifying different cuisines and their servings, this model will then be implemented as a web app using React-js on the front end

# Methods

## Mathematical Execution

## Theoretical Execution

## Practical Execution

# Results

# Discussion and Conclusion

# Abstract

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# References

1. Lukas Bossard, Matthieu Guillaumin, and Luc Van Gool. Food-101 – mining discrimi-native components with random forests. In European Conference on Computer Vision,2014