



# Food Sustainability Detector

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# The Problem

- 108 Billion pounds of food is wasted annually in the U.S.
- 16 Billion pounds of this waste is contributed by grocery stores and other food warehouses which is equivalent to 65 billion dollars.
- 30 Percent of orders from grocery stores are unsold and eventually thrown out
- Individual households throw away 103 pounds of spoiled food from their fridge every year



How can we reduce bulk food waste produced by companies such as Safeway, Wholefoods, Costco, etc?



By producing a device that can monitor food waste on not only fridges but also shelves, and provide this data and further analysis to shipment handlers in order to aid in more accurate inventory purchases.

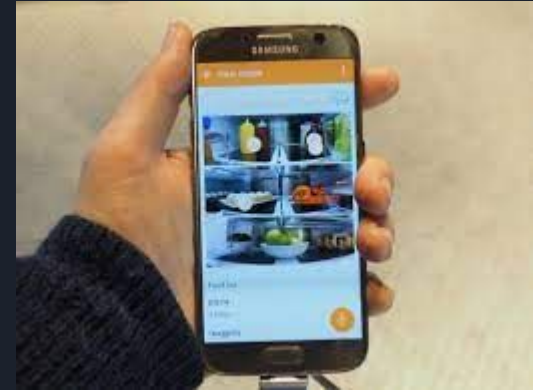
# The Solution: AI driven Food Sustainability Detector

- Our product is a device that can be installed in the industrial fridges of grocery stores or food warehouse shelves that implements visual recognition AI.
- This device then recognizes products, their quantity, and their condition, ie; rotting, expired, fresh and is able to store this data.
- The AI is able to provide analysis and recommendations to the user based on past product inventory info and the produce waste per shipment cycle through the use of a mobile and desktop application.



## The Solution: Continued

- This helps companies improve purchasing habits by ordering a more accurate quantity of inventory for future cycles.
- Our product through its visual identification AI is also able to determine which products require what temperature to be stored in/ time needed to be in a heating/ cooling environment. Through this, it is able to minimize electricity usage by only using minimal energy needed to sustain the products.





# Implementation Through IBM Watson

- Watson Visual Recognizing
  - Offered with IBM cloud services
  - Identifies objects/subjects through images then classifies the images
  - Recognizes when food is close to expiration/or expiry and estimate of how old food is
  - (ex. BANANA bought on 12/25/2022 expires Tomorrow 1/1/2023)
  
- Virtual Assistant
  - Customer Care Conversation AI
  - Records data like which foods common to least eaten, common to least common reaches expiration, how much of x product was bought + consumed

# How is it different from other Smart Fridges?

## Features

Detect the type of items and keep track of expiry and usage.

Prevent Maintenance Problems

Saves Energy Manually

Saves Energy through automation (Categorizing products and reducing temperature/ time spent under cooling/heating systems to bare minimum)

Caters towards industrial use.

Includes mobile and desktop applications that provide in depth analysis to users to influence future purchasing decisions.

Lightweight and versatile to install technology, can be installed on shelves as well as refrigerators

## Food Sustainability Detector



## Smart Fridges





# Benefits for Individuals and consumers

- Changes food buying habits

With the smart fridge telling us what we are buying too much of, it will in turn lead us to not overbuy

- Reduces waste in the long term

With less food in the fridge, we will subsequently use our food more efficiently and overall have less waste

- Possibly lower costs of buying

If the common person is overbuying, the fridge will tell us to buy less and in turn we will spend less money



# Benefits for Big Companies

- Promotes the decrease of over purchasing, thus reducing food waste
- Higher Turnover Ratios
- Cost savings
  - Labor, Food Handling and preparation, efficiency
- Conserves Electricity



## Scalability: Expansion into larger markets and Developing use of AIs

Planned Goal: Help households monitor their food waste and modify purchase habits.

- Expand towards the home consumer market after establishing our product for industrial use.

Planned Expanded Function: Increasing usage of AI (Artificial Nose)

- Can be used to determine if the food is rotten.
- Consists of a gas sensor that can identify the smell of different materials and detect the concentration of gases.





**Thank you for listening**

**Any Questions?**