



# HungerByte

ASSISTING FOOD INSECURITY

# A NATION-WIDE FOOD INSECURITY CRISIS

The COVID-19 pandemic continues to place great strain on the resources & ability of food bank networks to serve the rapidly growing number of Canadians experiencing food insecurity.

## How can AI help?



**HungerByte** leverages AI to assist food banks in **3 key areas**, employing a novel food demand forecasting method and adapting classical optimization methods for a COVID-19-oriented solution.

*Within the first 2 months of the pandemic, national food insecurity increased by 39%, affecting **1 in 7 Canadians**.*



**HungerByte** uses fundamental data stored by food banks to improve the performance of their existing supply chain. Our 3 aims are made realizable through the support of Canadian food banks and the team's AI expertise.

# MARKET ANALYSIS



## Sector Status

- 76% of individuals accessing food banks started using food banks because of COVID-19
- Growing demand for food bank usage due to unemployment and increased reliance on food banks
- Government provided \$100 million to Food Banks across Canada to account for decrease in food donations
- Despite lowered COVID-19 infections in the summer there was a 51% increase in food bank usage compared to same period in 2019

## Competitors

- Other supply-chain innovators for non-profit organizations
- Other associations competing for government funding

**Target Audience:** Canadian Food Banks (non-profit organizations)



## Need for additional help at food banks:

Decrease in food bank volunteers whom are usually elderly and high-risk group for COVID-19 infections

## Need to forecast times of decreased donations:

7/10 Canadians donating less because of pandemic



## Opportunities

### Need for food bank supply allocation:

- Prior to COVID-19, there was already an increasing trend in food bank visits reaching the same numbers we saw in 2010 following the 2008-2009 recession
- In March 2019, 47% of people chose cheaper and less healthy food options
- Smaller food charities receiving donations from corporations and farmers have difficulty accommodating excess food

## Challenges

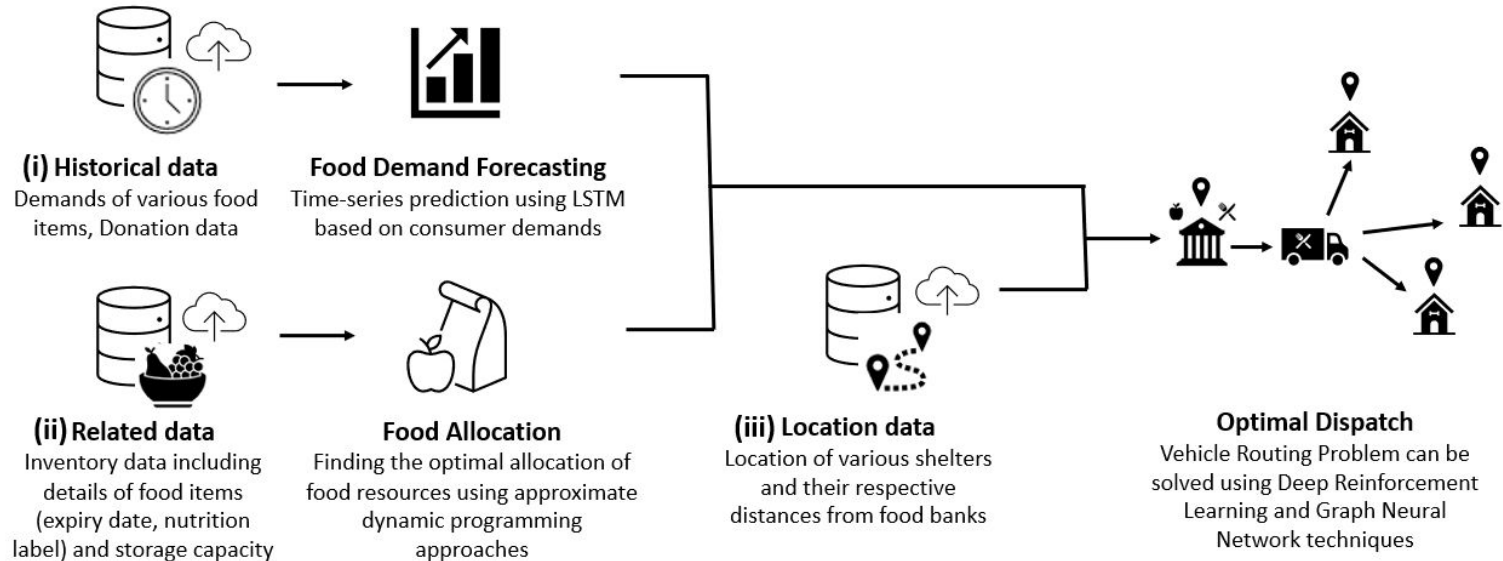
- Nonprofit organizations need to compete with each other for funding
- Food costs are far outpacing inflation, having a greater impact on low income households



# IMPLEMENTATION PLAN

- **Solution:** AI-based solution for **optimizing food bank warehousing** and **distribution management**
- **Data:** (i) Historical (food demand and donation records), (ii) Inventory, and (iii) Shipping Location data
- **Tools & Technology:** Python, Azure, Artificial Intelligence, Machine Learning

## Solution Architecture

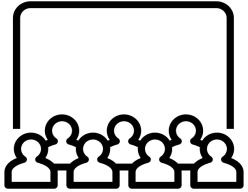


# MARKETING STRATEGY

## Target Audience



Food bank networks and partnered distributors

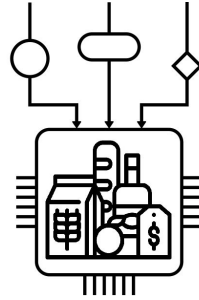


Ultimately, assisting individuals relying on food bank services, prioritizing communities in greatest need



Facilitating practical and efficient allocation of limited food resources is *invaluable* for those in need of food banks

## Marketing Mix



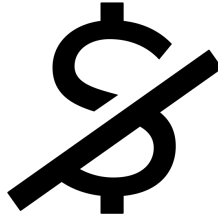
### Product

**HungerByte** - an intelligent resource forecasting and distribution system



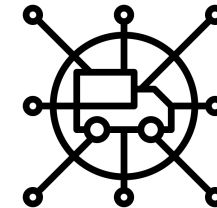
### Place

Partnered distributors within food bank networks



### Price

**HungerByte** will be a **free** service



### People

Organizations responsible for appropriating resources to various distribution centers

# MEET THE TEAM



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*"Spontaneous, active, computer vision enthusiast, and always looking for a new challenge."*



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*"Coder, painter, movie buff, foodie, soccer enthusiast, ML aficionado, DC geek, rock music lover and an occasional nerd, interested in anything under the sun."*



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*"An audiophile, gym-freak, neuro-nerd and A.I. enthusiast doing his master's in medical biophysics. Oh and food...I love food."*