related work:

A 2017 thesis written by Jay Harris titled A Machine Learning Approach to Forecasting Consumer Food Prices was a key related work in this project. The objective of Jay’s research was to test methods of predicting food prices for Canadian Consumers to determine the best method of forecasting. The paper compared baseline approaches commonly used in financial and econometric forecasting against machine learning techniques such as linear regression. This work illustrated the accuracy of these machine learning techniques when applied to consumer food price forecasting. \cite{jay} The machine learning approaches of that research was implemented in WEKA, a data mining and machine learning software suite with a graphical user interface. While WEKA is a good tool for testing machine learning strategies, more sophisticated tools can be used to develop more complete systems. \cite{jay}

In 2017, the Canada Food Price Report employed a machine learning model to supplement the panel of domain experts’ advice \cite{foodreport17}. It leveraged a combination of different machine learning methodologies, including linear regression and support vector machines, to forecast components of the Canadian Consumer Price Index. This was built on a research thesis done by Jabez (Jay) Harris which compared different machine learning algorithms ability to make econometric models to forecast food group categories listed in the Canada Consumer Price Index against benchmark models commonly used in financial and econometric forecasting \cite{jay}. In the report there were over twenty independent variables identified as potential inputs to the machine learning models and of these only ones that were highly correlated with a food categories price were used. These independent variables included household income, immigrant income, income distribution, international aid, population, unemployment, commodity futures, fuel prices, crude oil prices, energy indexes, CDN exchange rate, U.S. overnight lending rates, global agricultural production, global rainfall, commodity prices and global temperatures. \cite{foodreport17}.