AI POWERED FOOD DEMAND FORECASTING

LITERATURE SURVEY

YEAR	AUTHOR	OBJECTIVE	METHODOLOGY	LIMITATION
2020	K.Aishwarya Aishwarya.N.Rao Nikita Kumari, Akshit Mishra, Mrs.Rashmi M R	It provide an appropriate algorithm for demand forecasting which is capable of overpowering the wastage of short life items.	The number of customers is forecasted using machine learning and statistical analysis methods with internal data and external data in the ubiquitous environment. Bayesian Linear Regression, Boosted Decision Tree Regression, and Decision Forest Regression are used for machine learning, Stepwise method is used for statistical analysis methods.Their by predict it.	This evaluation is used practically for restaurants.More refined prediction can be done based on many other factors like cultural habits, religious holiday, consumer preferences.

| 2022 | Vera LuciaMigueis AndrePereira JoaoPereira GoncaloFigueira | we estimated the demand for fresh fish in a representative store of a large European retailing company used as a case study. The results revealed that the machine learning models provided accurate forecasts in comparison to the baseline models and the statistical model, with the Long Short-Term Memory networks model yielding, in general, the best results in terms of root mean squared error (FESS). | To gain more information about their customers and their buying behavior. This data collection has promoted a huge opportunity for improving operations. Thus, retailers have concentrated on developing more accurate forecasting models that help them make decisions that are more data-driven and less intuition-based | To validate the proposed approach and create a comprehensive assessment of predictive models for fish demand forecasting, we have implemented and tuned some of the best-known techniques from the literature. Furthermore, two baseline models were constructed. One considered as demand estimates the demand observed on the homologous day of the previous week and the other the demand observed on the day when the estimates were computed. |

2018	Bohdan M. Pavlyshenko	the differentials of the predictive approach in relation to demand, taking into account factors such as seasonality, geographic / regional preferences and changes in consumer behaviour.	Deep learning models have been tested and confirmed for forecasting crude oil prices, photovoltaic power and on-demand ride services. Research results related to the food industry mention deep learning methods (Convolutional Neural Network (CNN)-based food image recognition algorithm) used to derive food information (food type and portion size) from food image or to propose an assistive calorie measurement system. In proposed a time-dependent food distribution model and a Weight optimisation algorithm aimed at adapting the user's data to their eating habits. Deep learning has also been imposed in the waste sorting process to automate some of the waste handling tasks.	Often traditional demand forecasting can create an overlap between correlation of demand patterns and the causes of fluctuations in demand. At times, food retailers may use techniques to extract customer behavior patterns from correlations in demand shifts and link to external events. This may cause them to think that this is linked to demand shifts and believe it is the true cause of it.

| 2018 | Takashi Tanizakia, Tomohiro Hoshinoa , Takeshi Shimmurab, Takeshi Takenakac | Research has been conducted on how to advance store management by improving employees' work arrangement and food materials ordering based on accurate forecasting of the number of customers for face-to-face service industries and demand forecasting methods conducted by using internal data such as POS data and external data in the ubiquitous environment such as weather, events, etc. in order to improve the accuracy of demand forecasting | The number of customers is forecasted using machine learning and statistical analysis method with internal data and external data in the ubiquitous environment. Bayesian Linear Regression, Boosted Decision Tree Regression, and Decision Forest Regression are used for machine learning, Stepwise method is used for statistical analysis method. | There was no big difference in the forecasting rate using the method of Bayesian, Decision, and Stepwise, and the forecasting rate of Boosted was a little low. The forecast rate of any store exceeded approximately 85%. We got the evaluation that this method is practically applicable from the restaurant . |

| 2008 | Patrick Meulstee, Mykola Pechenizkiy | An ensemble learning approach is employed for dynamic integration of classifiers for better handling of seasonal changes and fluctuations in consumer demands. It focuses on currently operated, and how to improve predictions for each product by constructing new groups of predictive features from (1) publicly available data about the weather and holidays, and (2) data from related products. | We evaluate our approach on the real data collected by food wholesaling and retailing company. The results demonstrate that our ensemble learning approach can perform much better than the currently used baseline, we can handle seasonal changes with ensemble learning better if feature set for a target product is complemented with features of related product , and an ensemble can become more accurate if information about the weather and holidays is presented explicitly in a feature set. | The results also showed that we can handle seasonal changes with ensemble learning for many products better if feature set for a target product is complemented with features of the most related products, and that an ensemble can become more accurate if information about the weather and holidays is presented explicitly in a feature set..we studied this idea only with ensemble learning approach and implicit use of information about the changes observed in related products in base classifiers |