

ABSTRACT

A machine learning method and related cloud software architecture are provided that enables tracking of consumer dietary habits across time. The framework comprises three subsystems, vendor, restaurant and consumers and integrates analytics obtained through user actions within the three entities. The machine-learning framework is based on modeling the user habits as a mixture model with Gaussian components. These mixture components over time will represent the user habits of eating at particular times within a 24-hour period (each day). For each item, if the mixture distribution exceeds a fixed threshold number of components, the item is defined as having a uniform distribution across time. This kind of data structure simplifies search, update and query operations for the machine-learning algorithm. Following this machine learning step, many inferences are calculated in a Bayesian framework such as, the expected amount of traffic in a restaurant within a certain time period of the day, expected monthly profits based on user activity, the availability of a certain category of food items preferred by a consumer, and/or others. By using this semi-supervised model for learning and predicting user habits, consumers and business entities can alter their decision-making process in a manner that optimizes the functionality of a business establishment leading to improved profit margins and provides a personalized experience to the consumers.

FIG. 6 best represents the invention to be published.

REFERENCES

Food recommendation based on order history, *US20130339163A1*.

Ordering system, *JP2010238118A*.

Method and apparatus for ordering and delivering of meals, *US20090106124A1*.

Delivery managing system, *US6085170A*.