Gain a competitive edge against retail giants by using the power of machine learning on the key drivers of your merchandising process.

RITTER

MERCHANDISE ANALYTICS

www.ritterdragon.com

DATA CUSTODY

1

Our big data specialists execute a continuous data loading and wrangling process to ensure availability and to prepare your data for retail analytics. 24 x 7 task monitoring to detect unforseen errors.

MERCHANDISE PROCESS

2

Ritterdragon patent pending process for retail planning through machine learning components. Sales forecast, rationalization, inventory planning, allocation and purchasing.

MACHINE LEARNING

3

Advanced forecasting models, decision trees and clustering techniques along with specific algorithms proven to work effectively on Retail businesses. Top class visualization software enables to follow results in a friendly way.

FIVE RETAIL PLANS

4

Assortment.

Sales.

Inventory.

Allocation.

Purchasing.

Key Value

From executing the results from our plans, customers gain on average 12% sales increase and 16% inventory cost reductions.

Our exclusive, patent pending merchandise process with machine learning applications allow users to focus on the numbers instead of on lenghty software implementations.

Conceived exclusively for Retailers and with a rapid SaaS setup that enables customers to get first results within weeks.

Incorporate new product forecasts into your plans and measure the impact from promotions.

Get monthly purchase order recommendation for all significant store-sku combinations on your business.

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MERMAID
THE SOLUTION IS THE PROCESS

⟲ RITTER

time series and machine
learning models for retailers

DEMAND
FORECASTING

THE CHALLENGE

In order to ensure customer satisfaction, Retailer's today must be able to anticipate demand. More and more buying departments realize that judgemental predictions or decisions coming from generalistic calculations are not always

Forecasting is an activity that requires extensive data preparation and advanced business, statistical, coding and database skills difficult to combine on single individuals and therefore multifunctional teams must be created. Additionally, data volumes and intermittency make it more challenging to have forecasts updated every week for millions of combinations.

The more proactive retailers embarked on time series models to improve accuracy, however this models are not always precise, specially at SKU and store level combinations. Machine learning models on the other hand can improve accuracy by incorporating additional variables. .

TIME SERIES AND MACHINE LEARNING FAMILY MODELS

predicted value

A time series models predict a future sales value based on results from historical values, hence best used when demand is not affected by external influence.

B Machine Learning models on the other hand, are best for models where demand is influenced by multiple factors.

predicted value — Competition

Prices — Promos — Exhibition

THE SOLUTION...

1 Mermaid cleans and prepares the data to forecast, locates missing values and outliers automatically. No need to have IT staff doing this.

2 Our Sharkast engine uses its learned experience on millions of items to select the best fitting model for your dataset.

3 Experienced data scientists and retail experts review your forecast results and apply best practice error measurements.

4 Forecasts are refreshed bi-weekly and integrated into the merchandise analytics platform immediately.

ETS MEHTODS
THETA METHODS
REGRESSION MODELS
DECISION TREES

AUTOMATIC
BEST FIT
SELECTION

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△ MERMAID
THE SOLUTION IS THE PROCESS

**Start anticipating future demand for your trendy items with a machine learning solution.**

FORECAST NEW PRODUCTS

The Challenge

Due to uncertainty from customer reaction, estimating demand for new products is quite the feat. Because historical data from a new product is lacking, estimating right store inventory levels for buyers can be like a crapshoot.

Understanding item life cycles

From experience, buyers know that not all new items will follow the same shelve duration and life behavior. Through machine learning these cycles can be grouped into different *shapelets*. The problem lies in detecting as early as possible

TRADITIONAL   BOOM   FAD

LONG FAD   SEASONAL   REVIVAL
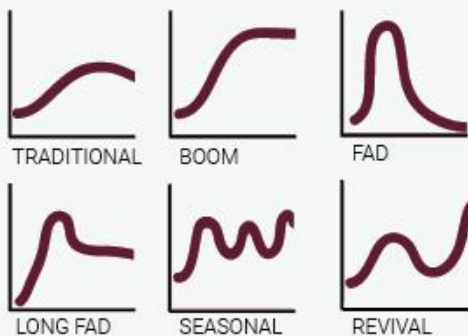
to which shapelet group a product belongs to. By using a trained data model, the right system can detect this early stage patterns and classify the item as a boom, fad or bust.

The Solution

Introducing the kraken algorithm embedded on the merchandise analytics solution from Mermaid. Kraken is a semi supervised curve fitting classifier that assigns a new item into its given shapelet from its sales behavior on the first few days.

Kraken is much better than simplistic approaches that use similar item averages or moving average models. On fashion or electronics categories, this could mean the difference from being behind the wave to being ahead of the wave. Kraken integrates to our inventory optimization component seamlessly.

The Steps

Identify new product on inventory	Track early sales pattern	Classify item life cycle	Forecast using model for shapelet
1	2	3	4

MERMAID
THE SOLUTION IS THE PROCESS

RITTER

Allow our specialists to handle the situation

DATA CUSTODY

1 Fetch & Load

2 Wrangling

3 Storage

4 Preparation

5 Optimization

6 Supervision

A retail operation generates millions of transactions coming from multiple product and store combinations. But to allow decisions makers to make timely decisions on this information, a Retailer must make sure the information is arranged, processed and prepared in the right way. This requires costly resources and skills that probably are not available or could be better used elsewhere.

Introducing the DATA CUSTODY tasks included on Ritterdragon's Mermaid merchandise-as-a-service solution. Mermaid is the premier Retailer's platform to apply machine learning insights into their merchandising process. Utilizing our Kerberos datacenter, Mermaid fulfills your data preparation needs by not only working as a database but a set of needed activities to prepare your data for machine learning.

In addition, Mermaid has the layouts and needed architecture to support the Mermaid applications for Merchandise Analytics:Forecasting, Assortment, Inventory, Allocation and Purchasing.Furthermore many of the needed KPIs to measure performance like period variations, GMROI, sales to stock and model error measuring are already embedded into our data warehouse, therefore allowing you touse the system from day one.
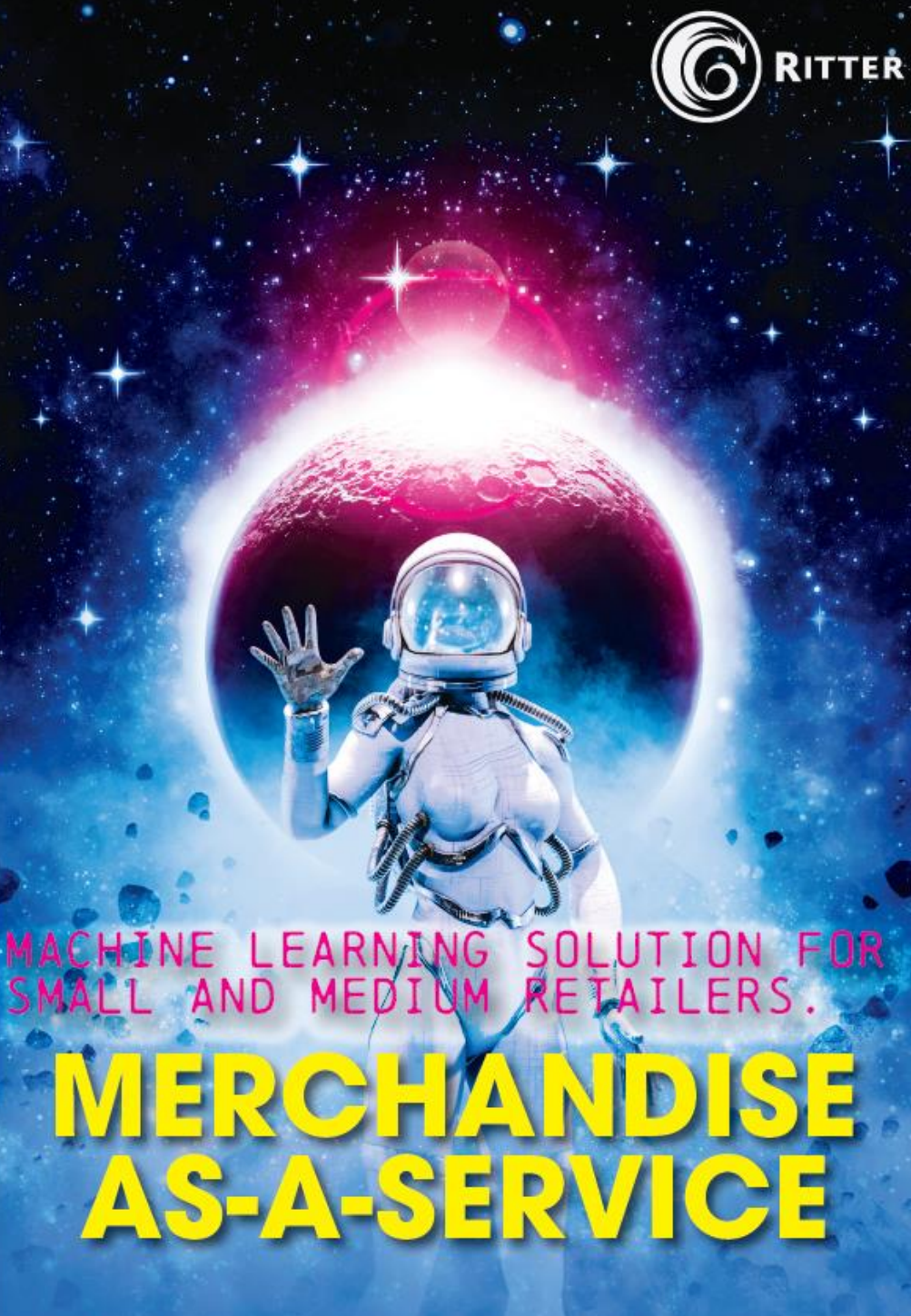
Big Data environment designed for retail analytics

ANALYTICS READY CLOUD FOR RETAILERS

TOP PERFORMANCE
365 DAYS AVAILABILITY

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THE SOLUTION IS THE PROCESS