

# Machine Learning Platform for AI

Introduction

# Introduction

## What is Machine Learning Platform for AI?

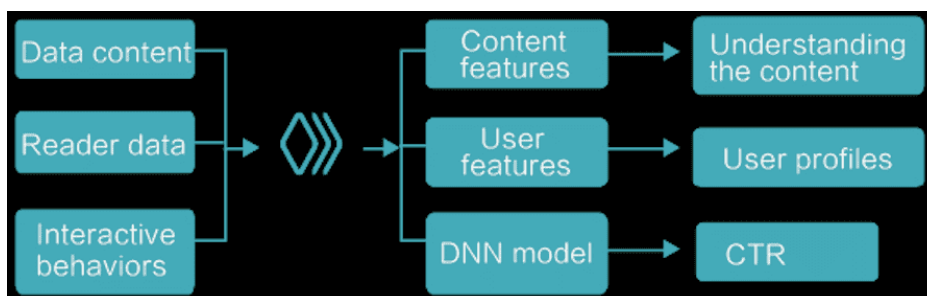
### Product overview

Machine learning refers to the practice of instructing machines to discover regular patterns from accumulated data to help users make predictions and decisions.

Alibaba Cloud Machine Learning Platform for AI provides an all-in-one machine learning service featuring low user technical skills requirements, but with high performance results. On the Machine Learning Platform for AI, you can quickly establish and deploy machine learning experiments to achieve seamless integration between algorithms and your business. Machine Learning Platform for AI is built on the full-fledged algorithm application system of Alibaba Group, and is now serving tens of thousands of developers and enterprise users. You can quickly build services such as product recommendation, financial risk control, image identification, and voice recognition based on Machine Learning Platform for AI to implement artificial intelligence.

### Successful case - Sina Weibo

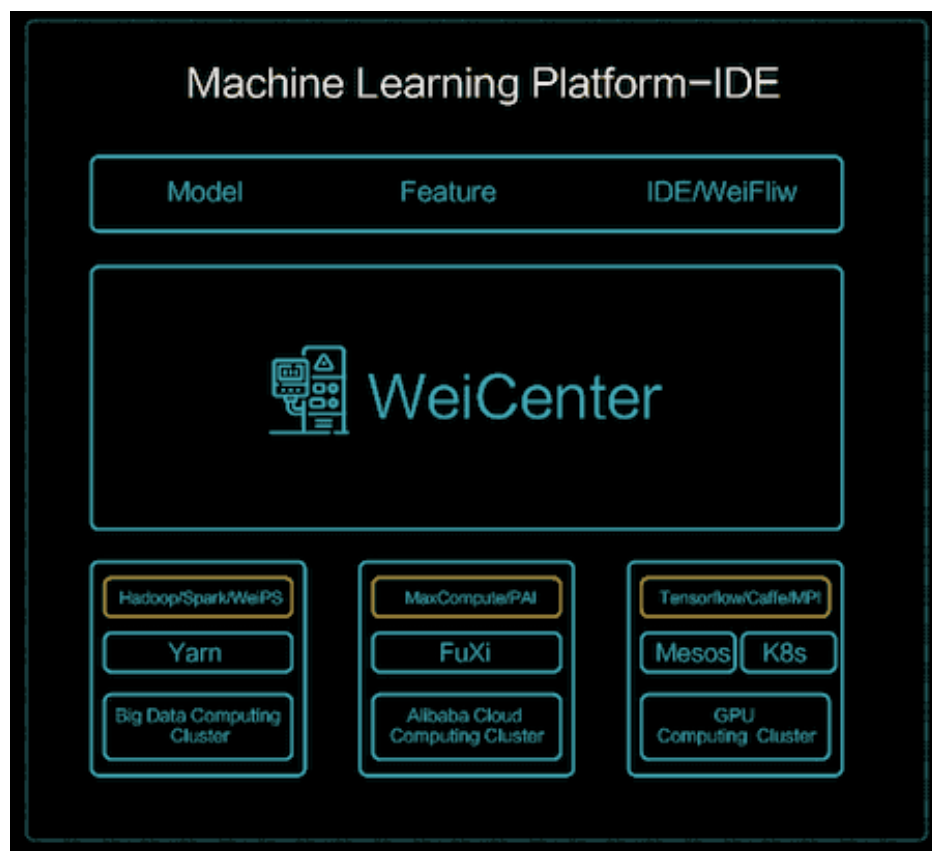
Sina Weibo is a leading social media platform in China. Sina Weibo has 165 million daily active users (DAUs) and 376 million monthly active users (MAUs). Mobile MAUs occupy as high as 92% of all MAUs. Involved data operation scenarios include, but are not limited to:



### Challenges

Users generate a huge amount of data on the platform every day. After data processing, tens of

billions of features and hundreds of billions of sample entries may be generated. How to compute and analyze such a huge amount of data poses a great challenge for the bottom-layer computing engine.

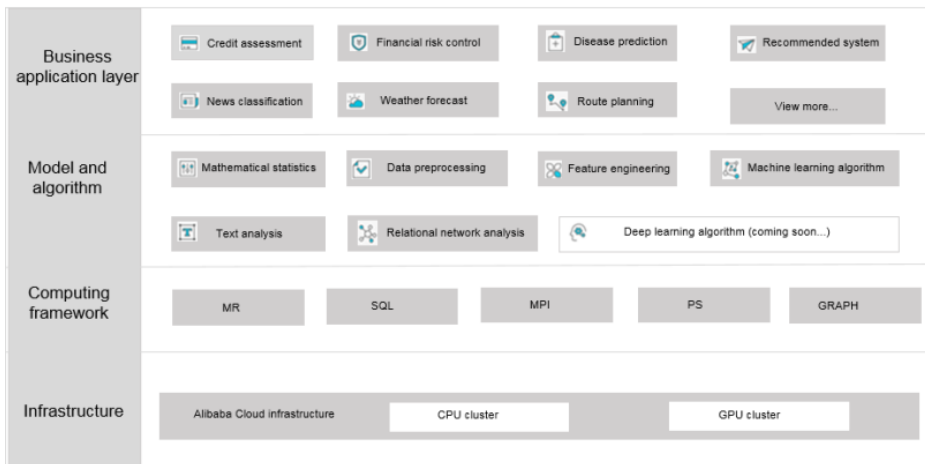


## Solution and architecture

As a part of Weibo Machine Learning Platform for AI, its Kungpeng distributed computing engine provides a sound solution for an ultra-large scale computing scenario.

## Architecture

The following figure shows the architecture of the Machine Learning Platform for AI.



The bottom layer is the infrastructure layer that consists of CPU and GPU clusters.

The second layer from the bottom is the Alibaba computing framework, which includes MapReduce, SQL, MPI, and other computing methods.

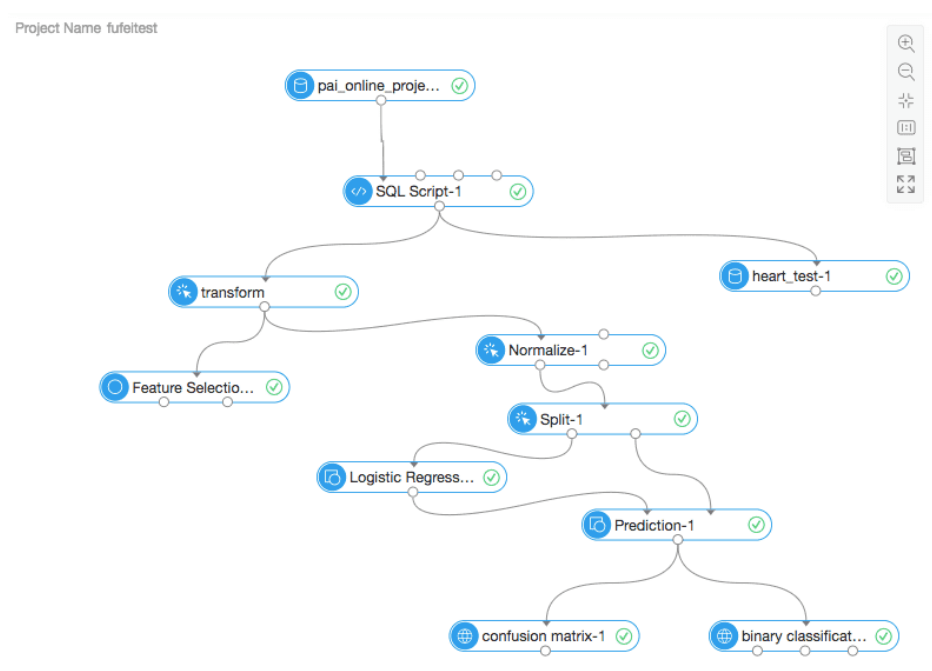
The layer in the middle is the model algorithm layer, which includes the data preprocessing, feature engineering, and machine learning algorithm and other basic components to help users complete certain fundamental jobs.

The top layer is the application layer. The data mining of Alibaba internal search, recommendation, Ant Financial and other projects depends on the Machine Learning Platform for AI.

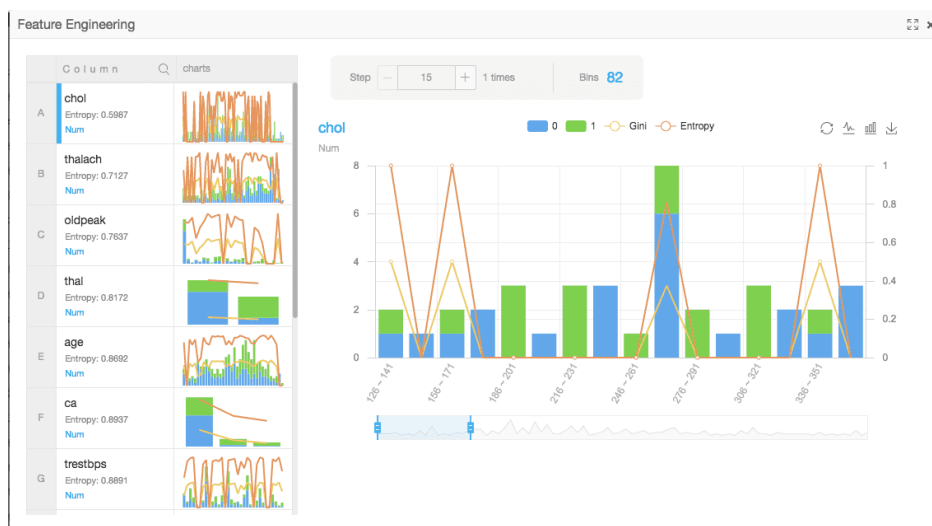
## Features

### User interface

You can quickly and easily build machine learning experiments using the drag-and-pull method.



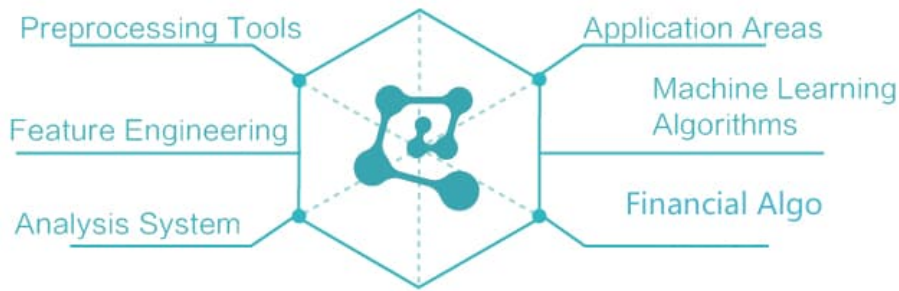
The computing results of the entire machine learning process can be visually displayed.



## Rich algorithm components

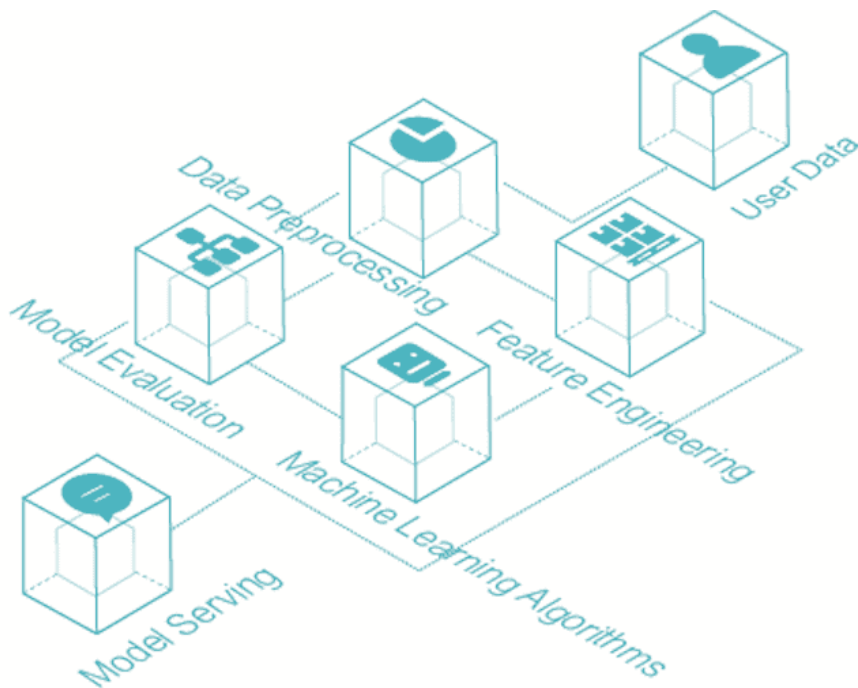
Provides more than 100 algorithm modules for regression, classification, clustering, text analysis, relationship mining, and many other models.

Supports preprocessing tools and software, feature engineering, analysis systems, application areas, common machine learning algorithms, financial algorithms.



## All-in-one service

Provides a comprehensive service experience by helping users implement data cleansing, feature engineering, machine learning algorithms, evaluation, online prediction, and offline scheduling on the same platform.



## Ultra-large scale computing framework Kungpeng

Through consistent optimization of asynchronous and parallel communication, Machine Learning Platform for AI supports high-throughput and low-latency parameter exchange, I/O of multiple types of streaming data, and exactly-once failover. This strategy supports the training tasks that involve tens of billions of features and hundreds of billions of parameter models. This strategy is backed by the rich experience accumulated through long-term support of algorithm services. Alibaba has developed an integrated algorithm system that covers the linear model, decision tree, to deep sparse model. In a large-scale sparse feature scenario, Machine Learning Platform for AI supports dynamic feature control that enables addition and removal of model features at any time, providing a powerful tool for CTR prediction scenarios such as recommendations, advertising, and search.