



Insights into Artificial Intelligence Applications in Cloud Computing

Innovation Lab – DerbySoft

Executive Summary

In recent years, global cloud computing expenditures and the demand for cloud services have increased substantially. DerbySoft's services are constantly increasing, which requires thousands of machines to run various business services on AWS, resulting in an increase in manual maintenance. Connectivity, in general, is complex with various service components in the pipeline all at one time. If one component malfunctions, there could be incredible disruption to a connection. The current alarms and manual inspections make covering all the components with the servers challenging.

DerbySoft has implemented advanced technology applications to increase server utilization and detect variances in the booking process.

Capacity Forecasting

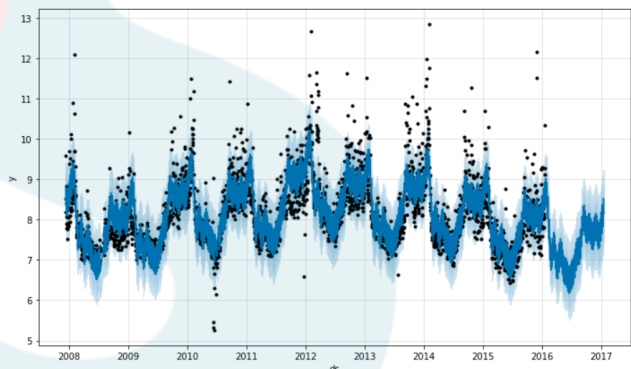
Capacity Forecasting provides a visualization and alarm service to help engineers see their capacity on a server as well as set an alarm to notify them if capacity is running short or is underutilized.

This not only saves manpower for operation and maintenance but increases the utilization of the machines without sacrificing the quality and stability of the services from DerbySoft.

In addition to using more advanced computing and storage technologies, the Capacity Forecast of cloud services has become increasingly important.

Time Series Analysis

After reviewing several statistical forecasting methods, DerbySoft has chosen Facebook's open-source **Prophet** algorithm model, which is based on a self-additive model that is used to fit non-linear trends such as years, weeks, seasons and holidays while taking into account outliers such as missing values and changes in trends.





Anomaly Detection

Anomaly Detection is the process of identifying abnormal events or behaviors from normal time series and is one of the most mature applications of time series data analysis out there today. Effective Anomaly Detection is widely used in many fields in the real world, including quantitative trading, network security, self-driving cars and daily maintenance on large-scale industrial equipment.

The Connectivity Services that DerbySoft provides are extremely complicated, and any error on one connection could also cause the service failure of an OTA further downstream. After the implementation of Anomaly Detection in April 2020, there was a noticeable improvement in the quality and stability of services for partners.

DerbySoft has always set alerts and alarms based on rules and fixed thresholds, however, there are thousands of connectivity components which make tracking each set of rules difficult and time consuming. At the same time, Anomaly Detection can learn from historical data without requiring a lot of manpower to set rules, which decreases the workload and increases coverage for alerts and alarms.

Conclusion

DerbySoft is deeply rooted in the spirit of innovation, and the company will always be driven by technology. The application of Artificial Intelligence, initiated by the Innovation Lab, has achieved great preliminary results. In the future, the team will apply Machine Learning to more business scenarios to provide customers with better services and to make the travel business easier. Read the full article [here](#).

DerbySoft

DerbySoft enables travel companies to work together through technology and innovation. As the leading provider of high-performance hotel distribution, DerbySoft connects distributors and suppliers through the Connectivity Suite by offering streamlined connectivity at both the CRS and PMS levels. DerbySoft also provides solutions for suppliers through the Digital Marketing Suite, which uses machine learning and rich data to drive high-performing digital marketing campaigns, and the Content Suite, a platform for collecting, managing and distributing quality hotel content to drive higher booking conversions.

With six offices around the globe and over 300 employees in 11 countries, DerbySoft continues to grow and develop the next generation of online hotel distribution infrastructure.