

Network Troubles, Problem Solved

Event Triggering for Network Performance Enhancements

CASE SUMMARY

Large scale cellular networks generate several thousands of alarms every day. Some of these are critical and lead to service disruption, while many others are warnings. A leading wireless carrier was having difficulty in providing adequate staffing to prepare for equipment failure and/or network outages. Their plan of preparation was expensive and inefficient as they would have a staff of support engineers and technicians on standby in anticipation of issues.

The client engaged Avlino to predict rather than to react to network issues or failures, and define optimum levels of Network Operations Center (NOC) staffing.

Alenza

Improving network performance and removing staffing uncertainties



Use data as a competitive tool in uncovering the unknown performance indicators that affect your business

Data Sources

Cellular Network Data
Call Logs
Server Logs

Objectives



Reduce staffing variance in the NOCS



Reduce Catastrophic Failures

- To provide a predictive model for the wireless company, Avlino collected 3 years of their internal data that included event logs, voice, SMS and all data call (activity) logs of the complete network from the various pieces of equipment totaling 500+ network parameters.
- The goal of this herculean task of collecting various data sets was to engineer the right set of features from the logs and activity data to create event triggers within a model that predicts equipment failures or congestion within the network ahead of time to provide sufficient time to resolve or address.
- From the 500+ identified network parameters, 28 new features or KPI's (Key Performance Indicators) that the company did not previously consider as an event trigger contributing to failures were identified and used in the model.
- Avlino's data scientists used a layered ensemble of machine learning models based on Hidden Markov model along with Random Forest, SVM, Adaboost and neural network algorithms, to build a model that effectively predicts failure events.

Alenza Delivers

A self-learning predictive model that is implemented within the technical maintenance infrastructure on site at the telecommunications company enables the support engineers and technicians to continuously monitor the network and the equipment as well as alerts them of possible failures 2 hours to few days in advance.



23% Errors Predicted few hours in advance



11% failures predicted few days in advance



30% reduction in variance of NOC staff

About Avlino

Avlino Inc. provides solutions and services in data analytics. Our primary focus is to simplify data analytics in a quest to nurture the "Citizen Data Scientist" concept by removing the complexities and replacing them with pure insight. Our robust solutions add value to customers through high quality, cost effective, and efficient solution delivery that integrates business strategy, data science, and data engineering models.

Request a Quote Today!

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