AI FOR NETWORK OPERATIONS

Operator Wireless Infrastructure Optimization

NVIDIA

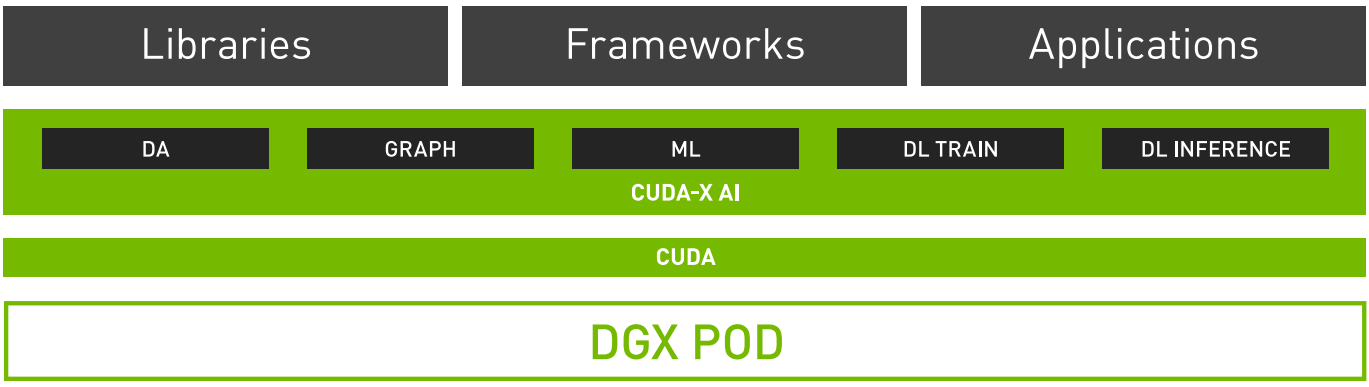
> *Using big data to improve customer experience has become a necessity in the telecom industry. With data science, network operations can be optimized to deliver an exceptional customer experience, reduce churn, and increase subscriber revenue.*

DATA SCIENCE CHALLENGES OF THE TELECOM INDUSTRY

Due to the deluge of data faced by network operations, including a multitude of data types, complex data processing, and slow visualization, most wireless network operators downsample, aggregate, and manually index large data sets to generate reports that are outdated the minute they are published. Not having the right data at the right time leads to costly workarounds. Aggregating data leads to missed insights and continuing to store dark, hidden and unusable data is not a solution. The result is significantly reduced visibility into network issues, poorer customer experience and performance which can cost billions of dollars in misallocated infrastructure and customer churn.

GPU-ACCELERATED DATA SCIENCE FOR TELECOM

NVIDIA helps mitigate the effects of data deluge and accelerates data science with GPU-accelerated solutions on NVIDIA® DGX™ Systems, purpose-built AI systems for data science workloads in telecom. Powered by NVIDIA, a collection of software-acceleration solutions built on top of CUDA®, this reference architecture for telecom provides operators, data scientists, and data engineers, an end-to-end solution that accelerates data science pipelines from data preparation, to model training, and visualization.



AI-powered data preparation solutions automatically classify, normalize, and standardize streaming data into meaningful taxonomy in minutes, instead of days. GPU-accelerated databases and visualization allow users to explore billions of rows of data in milliseconds. Machine learning and deep learning libraries also help users build AI-optimized models to predict the network in ways not previously possible.

The GPU-powered platform on NVIDIA DGX POD™, a proven reference architecture for integrated AI infrastructure design, allows users to process, normalize, understand, visualize, and predict, using the complex network data (i.e., vendor log data, signal strength, call drop, bandwidth measurements, accounting, billing, and session data) at their fingertips.

Customers leverage AI-powered data science solutions to experience:

Maximized Productivity

650%

Deep Learning Enabled Data Prep Improvement

(80 hours > 4 minutes)

Top Model Accuracy

10X

Faster Using GPU-Accelerated Machine Learning

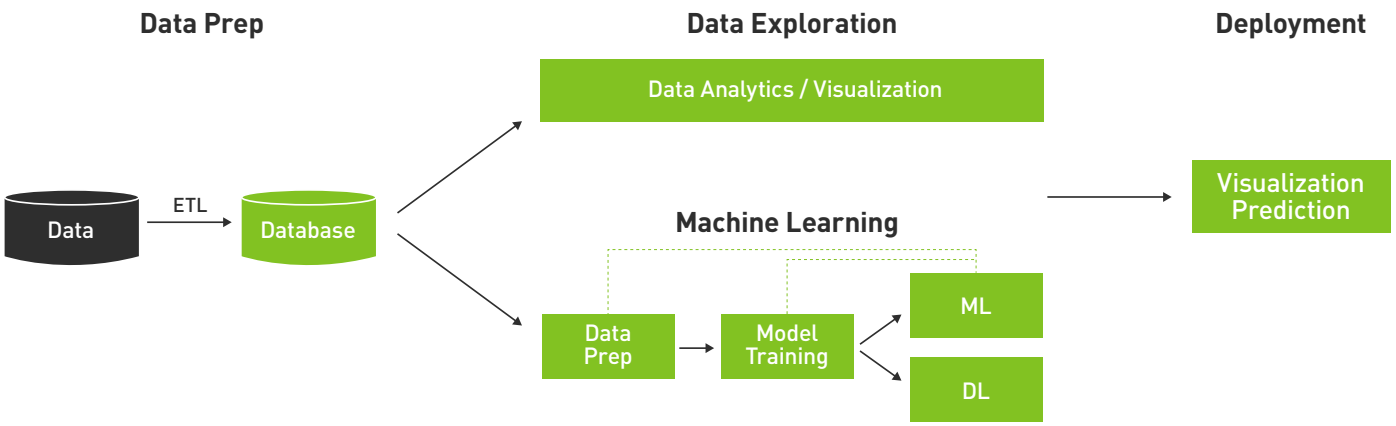
Lowest TCO

$50M

Minimum Operational Cost Savings

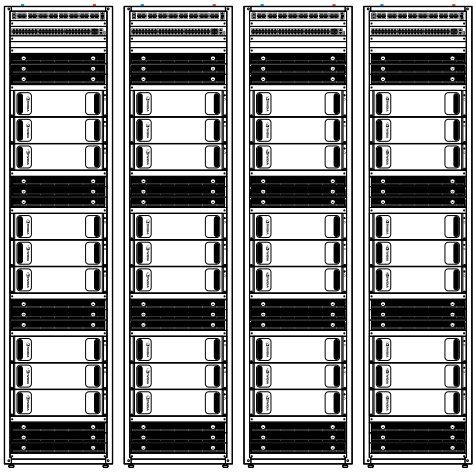
REVOLUTIONIZED DATA SCIENCE WORKFLOW

NVIDIA and its CUDA-X AI ecosystem offers a powerful AI operations solution for telecommunications and service providers to increase network visibility, improve customer experience, and save millions of dollars by using the following proven GPU-accelerated offerings on NVIDIA DGX POD.



Wireless network operators can optimize their cellular network profitability by using this proven reference architecture on NVIDIA DGX POD.

- **Datalogue**, a deep learning-enabled data preparation solution, to extract, understand, transform and load their data in four minutes, instead of 8 days.
- **OmniSci**, a fast database and visualization platform to query and visualize three months of wireless access points for 500K devices in milliseconds, at the speed of thought.
- **RAPIDS**, a suite of open source GPU-accelerated data processing and machine learning libraries built on CUDA-X AI to build models for predicting maximum network capacity, usage per user, and optimal access point location.
- **NVIDIA DGX POD**, a reference architecture that incorporates best practices for compute, networking, storage, power, cooling, and more in an integrated AI infrastructure design built on DGX.



With the right information at their fingertips, telecom providers can analyze past data, visualize current streaming data, and predict the future for root cause analytics. This represents a significant advantage to provide the best customer service in the telecom industry.

TO LEARN MORE, CLICK HERE TO VISIT:

CUDA-X AI for telecom demo
NVIDIA telecom webpage
NVIDIA accelerated data science
NVIDIA DGX Systems