



Case Study

AI/ML-based Leak Detection for Mixed-Phase Pipelines

Client

The client is a leading midstream company with over 66,000 miles of pipelines connecting over 60 plants and 10+ fractionating facilities transporting more than 6 trillion BTU's of product.

Challenges

- ✓ **Inability to detect leaks in mixed phase flow:** The standard solutions available were not applicable to the customer's requirements since they were more suited to work with homogenous flows as against the mixed phase flows handled by the client's pipelines.
- ✓ **Non-availability of standard models:** There were no off-the-shelf solutions available to predict leakages in pipelines with mixed phase flows.
- ✓ **Visualization for decision making:** Due to the geographic spread of the assets, supervisors needed a visually intuitive method of geospatially identifying problematic assets to deploy maintenance resources effectively.

LTIMindtree Solution

- ✓ Over 10 million records of time series data ingested into LTI's Azure hosted Mosaic Decisions platform, which then analyzed the historical data for baselining and performing Exploratory Data Analytics.
- ✓ Statistical models built for each measurement station to identify optimal operation ranges and tag stations with deviations of over +/- 2 Sigma from their mean on a daily basis.
- ✓ Visual Dashboards for real-time decision making regarding deployment of maintenance resources to prevent leakages.

Business Benefits

75%

Success rate in early detection of leakages thus improving leak detection capabilities for linear assets.

15%

Of monitored stations identified as unstable and their timely maintenance saved millions in lost uptime.

Reduced risk of environment impact – improved leak detection time from weeks to days and increased detection of leaks in remote areas.

About LTIMindtree

LTIMindtree is a global technology consulting and digital solutions company that enables enterprises across industries to reimagine business models, accelerate innovation, and maximize growth by harnessing digital technologies. As a digital transformation partner to more than 700 clients, LTIMindtree brings extensive domain and technology expertise to help drive superior competitive differentiation, customer experiences, and business outcomes in a converging world. Powered by 82,000+ talented and entrepreneurial professionals across more than 30 countries, LTIMindtree – a Larsen & Toubro Group company – combines the industry-acclaimed strengths of erstwhile Larsen and Toubro Infotech and Mindtree in solving the most complex business challenges and delivering transformation at scale. For more information, please visit <https://www.ltimindtree.com/>.