



Artificial Intelligence & Machine Learning

Think. Develop. Deploy

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LEAK DETECTION
WATER, OIL AND GAS



01. Elevator Pitch



What?

Water/Oil & Gas leak events are common in pipeline networks - more regularly than you'd expect actually, which causes billions of liters and commensurate revenue loss annually.



How?

In a first for the industry, we have created a state-of-the-art deep learning prediction algorithm that tags leaks and non-leaks with high accuracy (typically above 85%). Leak detection will never be the same again.

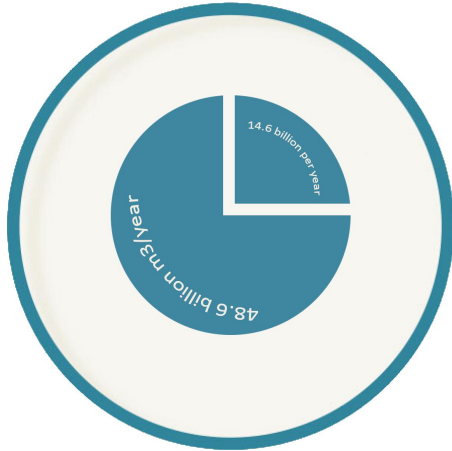


Why?

Leak detection through sounds is still a tedious, manual and error-prone process since humans find it often difficult to distinguish between leak and non-leak sounds.

02. Problem and Scope


- According to World Bank's estimate, water loss volume amounts to **48.6 billion m³/year** worldwide, with a financial loss of approximately **14.6 billion US dollars/year**.
- Almost **30% of the water supply** are lost through leaking pipes.
- Pipeline operators try to tackle this by installing acoustic sensors at regular intervals to identify leaks based on captured sounds.

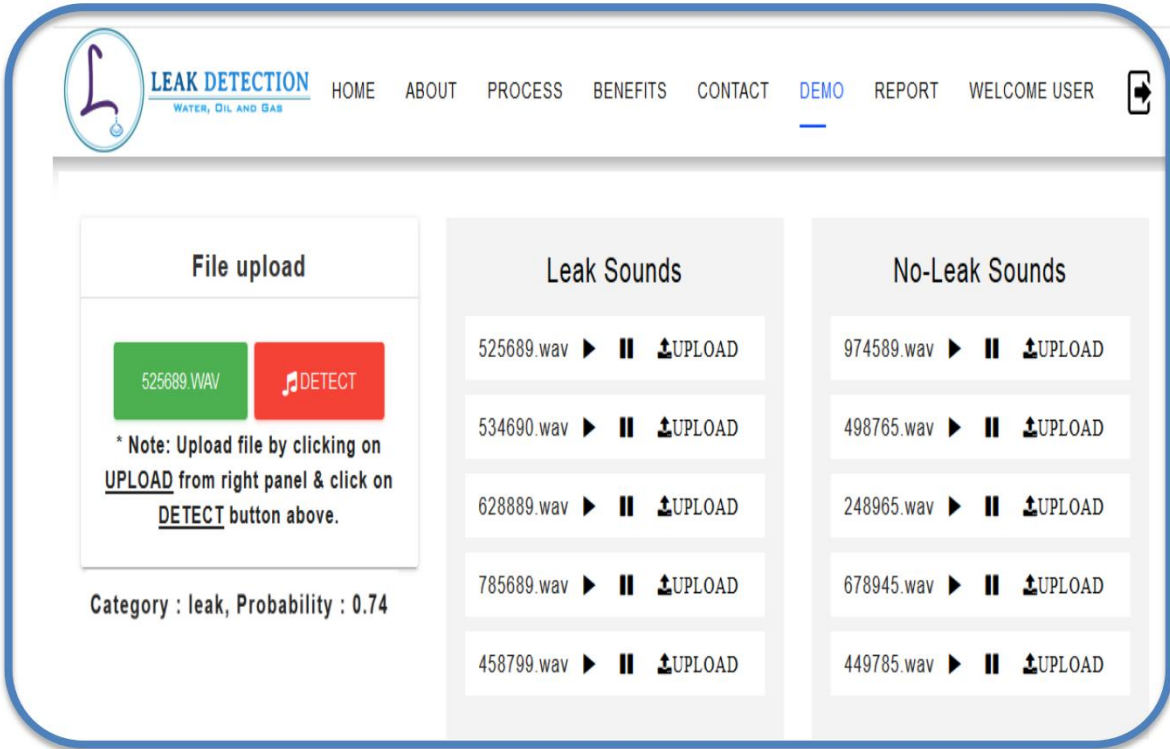


The Solution

A state-of-the-art deep learning prediction algorithm that tags leaks and non-leaks with high accuracy (typically above 85%).

Leak.wav 
 Category : leak
 Probability : 0.74

Noleak.wav 
 Category : no leak
 Probability : 0.82



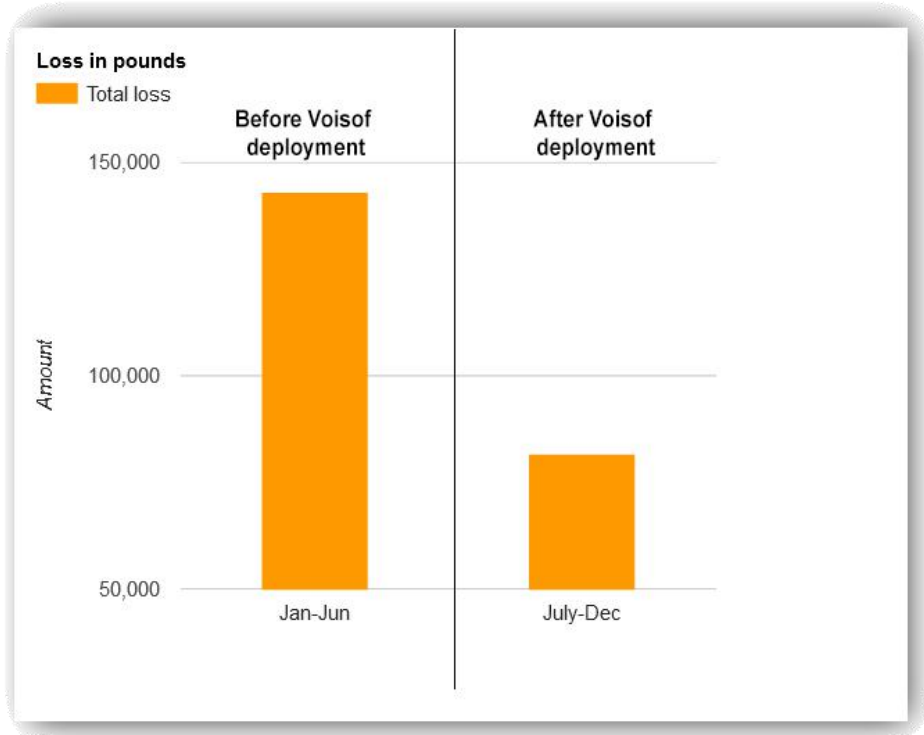
Leak detection also available as a real time API for large scale automatic operations, deployed on premises or on the cloud

If needed we also procure and install acoustic sensor hardware for data gathering

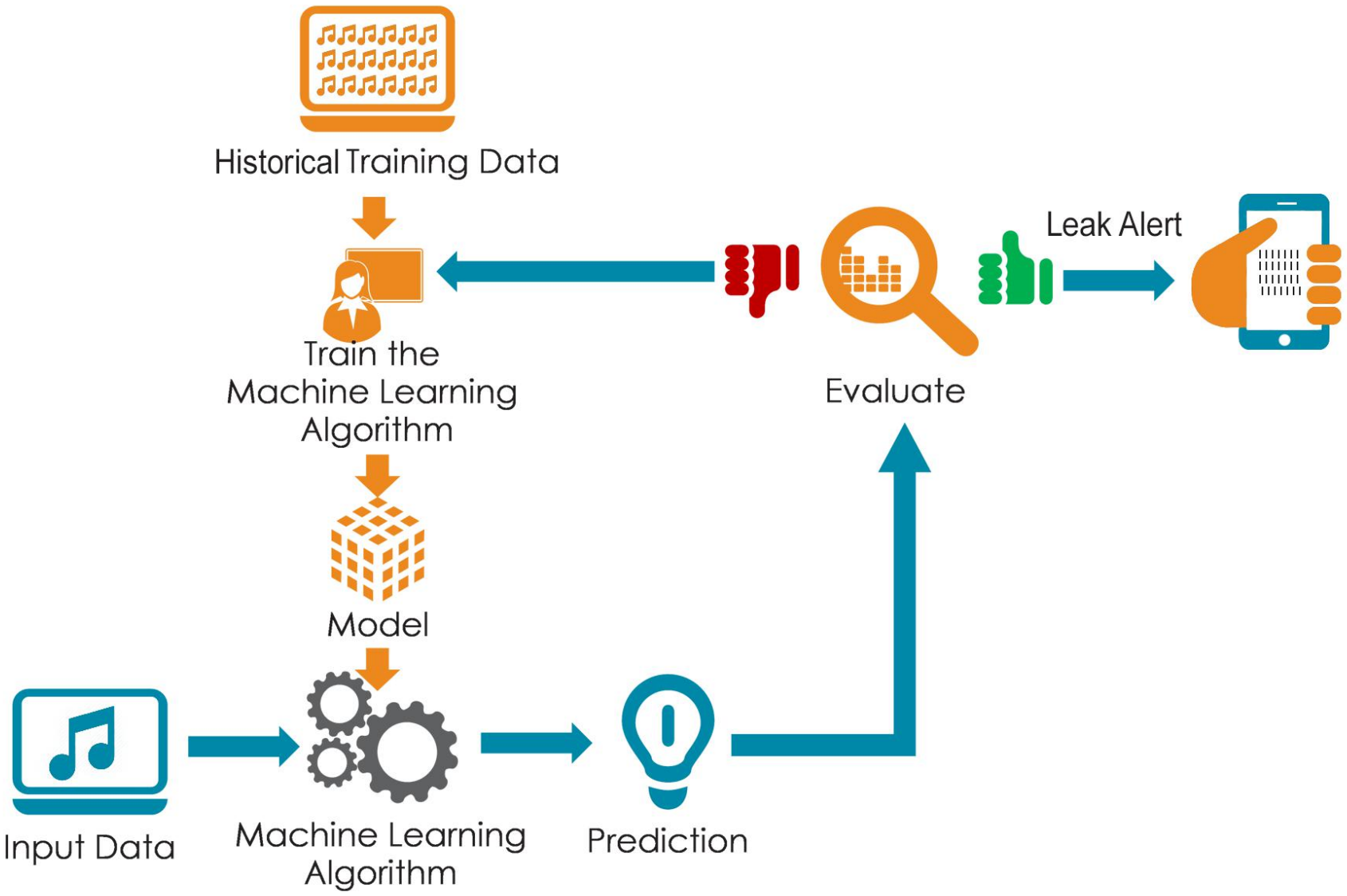
We also provide visualization & analytics components for report generation

Representational

04. Benefits and Business Impact



Field installations have resulted in 2 to 3x reduction in water losses, and above 2x reduction in corresponding financial losses



06. Market Opportunity

- Reports says Leak detection market to grow at 11% - 15% over next five years.
- The U.S. population has doubled over the past 50 years, while our thirst for water has tripled. With at least 40 states anticipating water shortages by 2024, the need to conserve water is critical.
- Currently billions of dollars loss faced by all private & government bodies, who involves in water distribution and our main aim is to avoid wastage of natural resources and money.
- Water supply bodies spend billions of dollars in cleaning and supplying water to households.
- Our target sectors are both government and private water bodies, who are actively looking for automated leak detection and classification system based on sound files or data coming through acoustic sensors.
- We shall be sharing this solution to both government and private water bodies and it can be used by them with annual service contract or as a SAAS based license system per user per sensor.

07. Revenue Model

➤ Targeted Clients

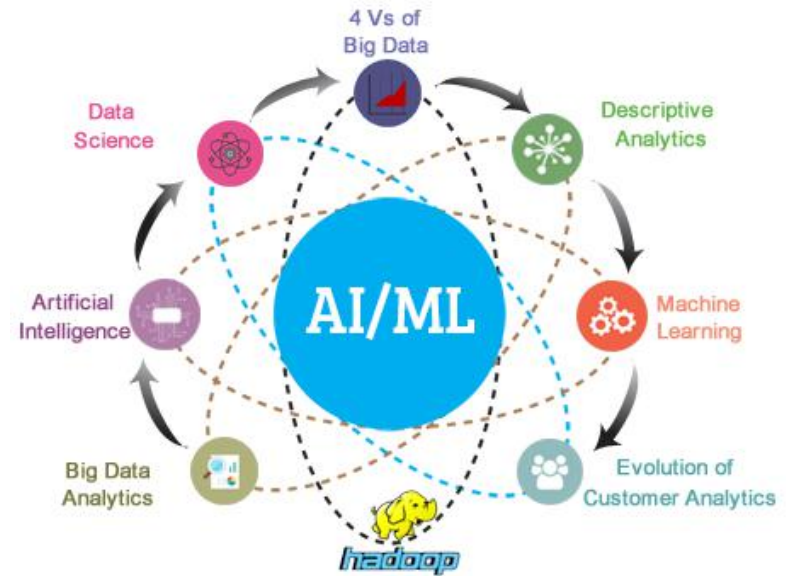
- Water Distribution Networks
- Water Purification Facilities
- Waste water Treatment Plants
- Water Cooling Plants
- Oil & Gas Plants

➤ Sales Model

- SAAS based licenses
- Product sales and Maintenance Contracts

08. The Promise

- Our vision is to create ubiquitous solutions serving multiple markets, and which become core to our clients' operations.
- We started as a Mobile First company, then embraced Big Data, and are now an **AI first company**, solving complex problems for our clients everyday.
- Using innovative ideas, TRIUM has rapidly grown into a global organization.
- Our mission is to make Machine Learning and Big Data Analytics easy for everyone.
- At TRIUM it's not just about the technology, it's also about understanding how technology can drive business.



09. Our Journey

We have constantly been pioneers and have stayed abreast of technology trends

to be continued ...

2018 Working on human activity detection, emotion detection for children suffering from autism spectrum disorder, improving our product voisof



Launched Voisof, our sounds and speech recognition solution

2017



<http://leak.voisof.com/>



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2016 Built Camersof, our video and CCTV intelligence solution



Mr. Hitesh Sonani
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Started our AI/ML journey

2016