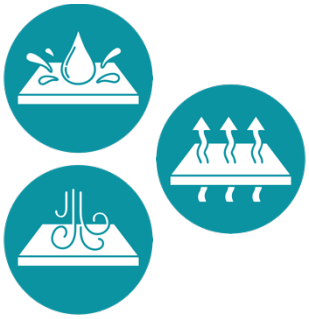
SpeedWise® ML

aws partner network

SpeedWise® ML (SML) Applies Machine Learning for Faster Prediction of Water Quality in Acid Mine Drainage



Acid Mine Drainage (AMD) is a significant environmental challenge caused by mining activities, generating large volumes of wastewater that require careful management. When this waste interacts with water under atmospheric conditions, it can result in the production of acidic water that poses a serious threat to the environment. Effective management and mitigation strategies are crucial to address the detrimental effects of AMD on ecosystems.

As a proof of concept, a Spanish environmental consulting company wanted to build a better, faster solution for determining the quality of water in AMD using machine learning and AI.

The Challenge

Testing for Acid Mine Drainage is a laborious and inefficient task. Once a week, the rock is flushed with water and the leachate needs to be analyzed. Results can take as long as six months and the process becomes very costly.

The Solution

For the POC, the environmental consultancy used SML as a solution to build an advanced machine learning model for fast prediction of water quality. Using predictive analysis, SML provided a solution that is safe, fast, and robust, with many functionalities that other ML tools on the market are lacking such as uncertainty quantification, powerful model analysis features, unique collaborative functionality, and an attractive price tag.

The Results

- Using SML, the environmental consultancy performed 141 experiments, with 30 cycles each (4230 data) to predict the final composition of the water after 30 weeks. Using SpeedWise ML's training and testing tool, they found the best ML algorithm that gave them the **most accurate predictions, between 85-97% accuracy, providing results much faster and more economical than traditional methods of testing water quality.**
- As a bonus, the solution was entered in the SmartCatalonia competition in Catalonia, Spain, **a government-launched competition to introduce new smart city technologies into the environmental sector. The company won first prize using SpeedWise ML's models to predict pollutants in the water before the water reached the wastewater treatment plant in Barcelona, Spain.**

"We used SpeedWise ML to develop our solution, and the proof of concepts. The results we've seen have been amazing. Today we are using the same solution for different clients around the world." – *Jorge Molinero, Deputy Managing Director at Amphos21*

About APN Partner and Amazon Web Services

With high-performance compute options powered by machine learning, Amazon Web Services (AWS) enables organizations to undergo broad digital transformations with modern, cloud-native solutions. Together, QRI's SpeedWise® SaaS solutions and the cloud-based services offered by AWS create increased scalability and security, suitable to be used by businesses of all sizes. Organizations take full advantage of SML's speed, real-time collaborative features and powerful data integration capabilities.

Watch an in-depth presentation of this customer use case on YouTube here.
To learn more visit www.SpeedWiseML.com