

SBB: Smooth operation thanks to intelligent early warning system



SBB wants to detect the impact of operational malfunctions more quickly and thus optimise train punctuality. A machine learning solution developed by Zühlke is helping achieve this.



Benefits in a nutshell

- **Early warning system for potential delays in railway operation**
- **Better evaluation of the risks and optimised resource planning**
- **Increased customer satisfaction**

Early warning system based on intelligent data

About 1.25 million passengers use the Swiss railway network every day. The Swiss Federal Railways (SBB) want to further reduce the impact of malfunctions in infrastructure and vehicles in order to ensure smooth operation. Big data is now being used to optimise staff planning, infrastructure maintenance and train punctuality. Zühlke has joined forces with SBB specialists to develop machine learning algorithms and deploy them on a big data platform.

«Thanks to the close collaboration, we have been able to merge train operations with Zühlke's data science capabilities and thus develop and optimise the product in a targeted manner.»

Dr. Andrea Michel, Product Owner, SBB

From proof of concept to machine learning solution

Zühlke data scientists are supporting SBB specialists on site. Together, the team is drafting a proof of concept and developing the architecture of a machine learning solution for operative implementation. This connects to data such as trouble records and weather forecasts and is then used to train the machine learning algorithms. The result? An effective early warning system that never stops improving.

Efficient planning, reduced costs

Thanks to Zühlke's machine learning solution, SBB is made aware of potential network delays in the upcoming weeks. This allows them to take the required measures early on in order to optimise punctuality. As a result, SBB can increase customer satisfaction and save costs.

Tools: Machine Learning, Data Science, Data Analytics, Big Data, SQL, Data Lake