HAL24K and Tauw win Data Challenge 2017 from Dutch government agency Rijkswaterstaat

Water expertise and machine learning prove the winning combination

Amsterdam – June 22, 2017

Data science startup HAL24K and European consulting and engineering firm Tauw have won the Data Challenge 2017. The challenge was based around 'Smart water management' and was issued by Rijkswaterstaat, the Dutch agency of the Ministry of Infrastructure and the Environment.

Maximum yield from water
The competition is an initiative set up by a number of partners in the 'Smart water management' programme, which includes Rijkswaterstaat and several regional public water authorities. Participants in the challenge were asked to develop a method to extract as much social, ecological or economic efficiency from a cubic meter of water. The data was derived from the catchment and drainage area of the North Sea Canal and Amsterdam-Rhine Canal. Due to the complexity of the involved water systems, the data science specialists of HAL24K and Tauw's water experts decided to collaborate.

A combination of AI and machine learning
The winning solution combined artificial intelligence (AI) and machine learning (ML). Employing advanced methods of data intelligence, HAL24K and Tauw modeled the operational (flexible) water level management on a large-scale and with a high degree of accuracy. By using historical data in conjunction with ML and AI, the team predicted water levels and what adjustments would be required for optimal energy consumption and various climate conditions. The solution also highlighted how to ensure optimal water distribution between the different management areas.

Jerome Mol, CEO of HAL24K said: "We have developed algorithms that can learn from past data to provide real-time predictions. It is good to see that even in water management in the Netherlands, which is already administered very well, our advanced data science can make a positive contribution. Ultra-complex systems such as these suit our HAL24K Platform perfectly."

HAL24K and Tauw investigated the water damage in the management area of Hoogheemraadschap de Stichtse Rijnlanden. They used precipitation data, pump data, target levels and surface water levels over the past five years to build the AI and ML models. The jury was impressed with the comprehensive solution and the visualization of the model and how it identified underlying issues.

The HAL24K and Tauw team was able to deliver a concrete result in a short period of time, which is applicable to multiple management areas and lends itself perfectly for further development.

Annemieke Nijhof, CEO of Tauw Group said: "The results show the enormous potential of machine learning and artificial intelligence. They provide an excellent basis for many applications within water management. This enables us to better support decision making by administrators and policy makers".

Notes for editors:

About the data challenge
The Data Challenge 2017 took place within the framework of the 'Smart water management' programme. The organization included Rijkswaterstaat, Water Authority Amstel, Gooi & Vecht, Hoogheemraadschap de Stichtse Rijnlanden, Hoogheemraadschap van Rijnland, Hoogheemraadschap Hollands Noorderkwartier, in cooperation with Statistics Netherlands (CBS), the Royal Netherlands Meteorological Institute (KNMI), STOWA, Dutch Water Authorities and Nelen & Schuurmans. Rijkswaterstaat acted as secretary.

About Tauw
Tauw Group is an international firm of consulting engineers with branches in the Netherlands, Belgium, Germany, France, Spain and Italy with over 1,000 employees. In the Netherlands the organization operates as Tauw bv and Atrivé bv. Using the theme 'Tauw Takes Care' the company supports clients in a responsible way with clear recommendations taking into account all aspects in the field of the environment, safety, energy, water and the living environment.
www.tauw.com

About HAL24K
HAL24K is a Data Intelligence Lab based in San Francisco, Amsterdam and London, delivering operational and predictive intelligence to Smart cities and Smart enterprises.

It combines advanced data science techniques – such as machine learning and deep neural networks – with modelling, analysis and visualization through its SaaS-based HAL24K Dimension platform, to enable real-time data-driven decision making in complex and multidimensional environments. This optimizes resources, avoids disruptions and saves costs.
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