RailBusinessDaily

Researchers develop algorithm to reduce rail delays

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In news that will bring a cheer to the hearts of many commuters, the first algorithm to detect delays automatically on the tracks has been developed.

The intelligent tool was developed by researchers at the University of Portsmouth in conjunction with First MTR South Western Railway via a two-year knowledge transfer partnership (KTP), funded by Innovate UK.

Minimising disruption to rail travel is challenging with more than 1,700 trains operating on South Western Railway's rail network across Southern England daily. It is difficult for controllers to detect delays promptly, which leads to further delays in selecting contingency plans.

Despite large increases in passenger numbers, trains and crews, rail operators have been using the same systems and technology for decades.

Dr Edward Smart, KTP academic supervisor, said: "As a commuter myself, I'm delighted to be able to contribute to this project that will improve the customer experience. It highlights the impact that machine learning algorithms can have for real world applications."

University researchers automatically analysed data to determine the point of delay, identify which trains would be affected and select the appropriate contingency plans to get the services back on track. The intelligent tool is designed with machine learning techniques to reduce dramatically the time to analyse and process the data.

Professor Chris Simms, KTP academic lead, said: “Automatic detection of delays represents the future of the rail sector. This project has made an important first step in realising the potential represented by machine learning to mitigate railway delays.”

The tool is currently being used within the South Western Railway (SWR) Control Centre, which is responsible for controlling the movement of trains across the network.

Chris Prior, Head of Control Projects at SWR, said: “Working with the University of Portsmouth has been an excellent experience for SWR and has transferred understanding into the business on systems development and AI. Together we have developed a system which improves the speed to response to recover late running, learn from and continuously improve SWR customer’s experience.”

South Western Railway (SWR) is a joint venture between FirstGroup and MTR Europe, two of the world’s leading train companies. With about 235 million passenger journeys a year, the South Western franchise is the largest and busiest in the UK railway network.

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