

Purple Transform awarded Innovate UK funding for work to reduce suicide attempts on the railways

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Purple Transform, which focuses on developing technology to improve human outcomes, has announced it has been awarded funding from **Innovate UK**, part of UK Research and Innovation, for its pioneering work developing AI models to identify people at risk of committing suicide on the railways. The company's ongoing initiative, Project SAIVE – which stands for Suicide Avoidance via Intelligent Video Examination – utilises three different AI-enabled technologies to identify and assess the behaviour of people who could be at risk, alerting staff, mental health professionals and the police to the incident, and providing actionable advice about how to respond.

Between 2020 and 2021, there were 2,057 suicide attempts and **247** deaths by suicide. Not only do these tragedies come at an enormous social cost – in terms of the trauma caused to families, friends, rail employees and other witnesses – they also cause widespread disruption, with Network Rail estimating that each incident costs **an average of £1.67m**. Project SAIVE – which Purple Transform is working on in partnership with Govia Thameslink Railway and experts in mental health management and technology at

Lancaster University – has been devised to help railway personnel and the police take swifter, smarter action to prevent more lives from being lost.

The first method of AI leverages psychology, behavioural science and computer vision algorithms implemented on smart cameras installed throughout stations and along the track. These cameras are trained to look for indicators of potential suicide attempts. The second method uses deep learning which has been trained on existing footage, to predict and generate risk scores by picking up on certain behaviours. The third method of AI alerts staff that an incident could be unfolding, providing them with actionable advice on how to proceed. Similar alerts can also be issued to mental health professionals, specially trained railway staff and British Transport Police.

“We are really proud of our partnership with Lancaster University and Govia Thameslink Railway and pleased it has been recognised by Innovate UK,” said Gregory Butler, CEO, Purple Transform. “Every vulnerable individual deserves support, and we are committed to developing ethical AI that has a positive impact on society by creating better human outcomes.”

Dr Mahsa Honary from Lancaster University Management School said: “Drawing on previous research on the integration of technology for mental health management and users’ behavioural analysis, we will identify patterns in likely movements and behaviours of extremely vulnerable people in order to effectively train the AI system. By programming it with key markers to look out for, we hope to see swift and effective interventions so that more lives can be saved.”

Project SAIVE is delivered via Purple Transform’s proprietary AI platform, SiYtE, which extracts and aggregates real-time anonymised data from across entire organisational infrastructures – including from CCTV cameras, IoT sensors and third-party feeds – before using AI and machine learning techniques to analyse and visualise this data in real-time. The AI is trained to recognise typical behaviours, triggering alerts if it identifies or predicts any anomalies. Compliant with GDPR, the platform is designed to protect the privacy of employees and customers.

Photo credit: Purple Transform