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Auckland AI start-up takes on underage vaping in schools

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By Catherine Knowles, Journalist

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MACSO, an Auckland-based Artificial Intelligence (AI) start-up has developed technology to combat the escalating vaping issue within schools and public spaces. Funded by US investors, the company aims to identify and quantify air pollutants specifically from vape and cigarette smoke. Trials have already exhibited a reduction in illicit vaping within one New Zealand middle school.

MACSO's collaboration with US company, Piera Systems, facilitates the implementation of the AI model. Piera Systems, renowned for creating an extensive selection of intelligent particle sensors, provides the necessary hardware. Raj Seelam, VP of Marketing and Customer Success at Piera, indicates Piera as the only low-cost centre with 'scalable sensors to detect particle data'.

Saba Samiei, MACSO's founder, expresses his ricocheting pride at leading the mission alongside Piera, exclaiming, 'As a purpose-driven AI company, dedicated to bringing the positive impact of artificial intelligence to the world, we are proud to be working with Piera on the mission to make schools vape and smoke-free.'

The existing solutions like fire alarms and traditional vape detection sensors have failed to detect vape particles, contributing to the consistent rise of vaping in underage students. The new AI model technology surpasses the previous development flaws, accurately discerning between a variety of particles, ranging from deodorant to vape smoke. It emphasises cost-effectiveness and safeguards individual privacy.

Samiei shared his concerns about the growing vaping issues within schools. 'Vaping has been an issue in schools, particularly in bathrooms. The number of New Zealanders aged 15-17 who vaped daily nearly quadrupled from under two percent in 2018-19 to seven percent in 2021-22, according to data from the New Zealand Health Survey.'

In a recently accomplished trial, MACSO had placed a device in a bathroom at Cambridge Middle School. The impact was momentous, within two weeks the bathroom had become vape free as students quickly recognised they would be caught if they used vape products. Natalie Marsh, Assistant Principal at the Cambridge Middle School reflected on the success, highlighting students' feeling of increased safety in using the bathrooms.

Piera's Raj Seelam praises MACSO's AI model's exceptional capability to distinguish distinctly between vape, smoke, and body spray, considering the accuracy of detection as a leap forward in controlling underage vaping. 'Vaping has a unique signature, and MACSO models are looking for these signatures in the air; that's how we detect it.'

The new MACSO AI model has now reached the stage where it can be marketed and implemented. Seelam concluded, 'What we are doing now is bringing MACSO's model to market and deploying it. The first deployment will happen in New Zealand but we're talking to schools here in the United States and customers in the United Kingdom.'

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