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AI predicts cancer patients' symptoms

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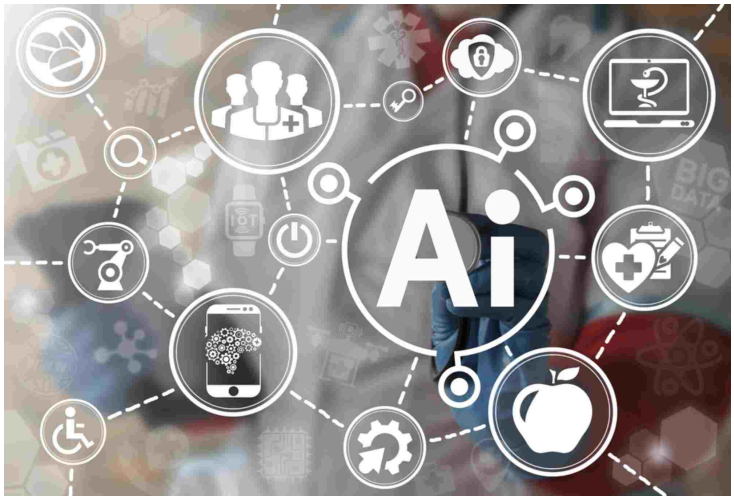
This work has been collaboration between the University of Surrey and the University of California in San Francisco (UCSF).



Doctors could get a head start treating cancer thanks to new AI developed at the University of Surrey that is able to predict symptoms and their severity throughout the course of a patient's treatment.

In what is believed to be the first study of its kind,researchers from the Centre for Vision, Speech and Signal Processing (CVSSP) at the University of Surrey detail how they created two machine learning models that are both able to accurately predict the severity of three common symptoms faced by cancer patients – depression, anxiety and sleep disturbance. All three symptoms are associated with severe reduction in cancer patients' quality of life.

Researchers analysed existing data of the symptoms experienced by cancer patients during the course of computed tomography x-ray treatment. The team used different time periods during this data to test whether the machine learning algorithms are able to accurately predict when and if symptoms surfaced.

The results found that the actual reported symptoms were very close to those predicted by the machine learning methods.

This work has been a collaboration between the University of Surrey and the University of California in San Francisco (UCSF). The UCSF research in this joint collaboration is led by Professor Christine Miaskowski.

Payam Barnaghi, Professor of Machine Intelligence at the University of Surrey, said: "These exciting results show that there is an opportunity for machine learning techniques to make a real difference in the lives of people living with cancer. They can help clinicians identify high-risk patients, help and support their symptom experience and pre-emptively plan a way to manage those symptoms and improve quality of life."

Nikos Papachristou, who worked on designing the machine learning algorithms for this project, said: "I am very excited to see how machine learning and AI can be used to create solutions that have a positive impact on the quality of life and well-being

of patients.”