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US researchers develop machine learning model to detect cancer

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The model accurately classifies the stages of bladder cancer in a patient



The invasive and expensive diagnosis process of bladder cancer, which is one of the most common and aggressive cancers in the United States, may be soon helped by a novel non-invasive diagnostic method thanks to advances in machine learning research at the San Diego Supercomputer Center (SDSC), Moores Cancer Center, and CureMatch Incorporated.

Research scientists Igor Tsigelny and Valentina Kouznetsova have been working on the development of a machine-learning (ML) model that looks at a patient's metabolites and their chemical descriptors. The model accurately classifies the stages of bladder cancer in a patient, according to the researchers.

The researchers trained the software – called multi-layer perceptron or MLP – with the data of urine metabolites of the patients with the different stages of the disease. Each stage has its own profile of metabolites. MLP analyzes the chemical descriptor of the sets of metabolites related to each stage of cancer and creates AI models of these profiles.