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US researchers use radar and AI technologies for managing diabetes

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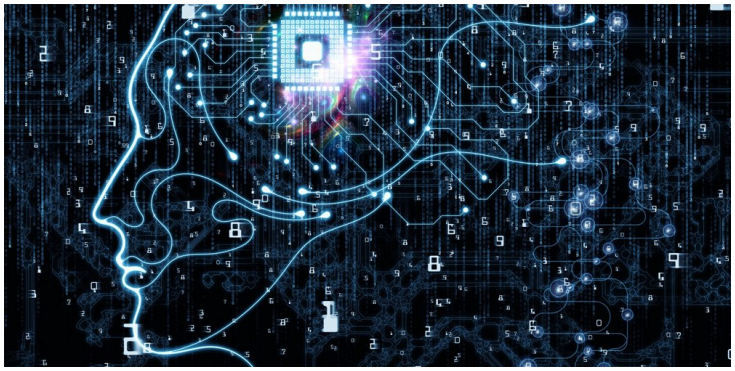
The research involves collaboration with Google and German hardware company Infineon.



Researchers from the University of Waterloo in Canada have combined radar and artificial intelligence (AI) technologies to detect changes in glucose levels without the need for painful finger pricks several times a day.

The research involves collaboration with Google and German hardware company Infineon, which jointly developed a small radar device and sought input from select teams around the world on potential applications.

The system at Waterloo uses the radar device to send high-frequency radio waves into liquids containing various levels of glucose and receive radio waves that are reflected back to it.

Information on the reflected waves is then converted into digital data for analysis by machine-learning AI algorithms developed by the researchers.

The software is capable of detecting glucose changes based on more than 500 wave features or characteristics, including how long it takes for them to bounce back to the device.

Next steps include refining the system to precisely quantify glucose levels and obtain results through the skin, which complicates the process.

Researchers are also working with Infineon to shrink the radar device so that it is both low-cost and low-power.