WHO refers to Tec development for COVID detection with deep learning

The work of **Tec de Monterrey** researchers **Mohammad Khubeb Siddiqui and Rubén Morales** on the development of a method based on neural networks with deep learning to detect **COVID-19 has been referenced by the WHO** on the internet.

This scientific contribution, performed in **collaboration with scientists from India**, was published "in record time" in the paper *"Application of Deep Learning for Fast Detection of COVID-19 in X-Rays using nCOVnet"* and **appeared in the scientific journal** *"**Chaos, Solitons and Fractals**"*.

Rubén Morales, a professor from the School of Engineering and Sciences, **explained that** the "*nCOVnet"* method can **analyze x-rays from patients with symptoms and detect cases that are positive for COVID-19**.


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He added that a deep learning network is a **set of complex equations** with an **ample number of variables,** so **algorithms** are developed in order to **train** these networks.

In this case, the system was programmed to **learn to interpret x-rays** from patients infected with **COVID-19.**

“Our research was published in a Scopus Q1 quartile scientific journal. They accepted the work in record time.”

“This network analyzes patients’ x-rays and interprets certain characteristics, as it has been trained to detect the damage caused to the lungs by the novel coronavirus,” said **Rubén Morales**.

He emphasized that this is a **complementary diagnosis method** to testing for antibodies and RT-PCR, as this innovation does not seek to substitute the standard method, but **offer an alternative within the scope of most medical centers** in the world.

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According to the scientific paper, the model proposed can detect if a patient is positive for **COVID-19** with an **accuracy of more than 97%**, so it would facilitate detection of infected patients to **place them in respiratory isolation and reduce community transmission**.


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*“This model could help hospital management and medical experts to take the necessary steps for handling patients with **COVID-19** after rapid detection,”* explained Morales, who is also national director of the School of Engineering and Sciences (EIC).

This innovation joins **other efforts made by scientists from the EIC** to offer **methods for detecting COVID-19 through the use of artificial intelligence systems**.

Such is the case for the innovation developed by **Sergio Uribe**, director of the Tec’s Center of Innovation in Design and Technology and Professor **Cristian Mendoza,** which can identify characteristic patterns from more than 5,000 x-ray images.

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