Empathic engineering! Tec students win UNESCO innovation award

With their project, ***Merging Humans and Tech: Robot-Guided Virtual Therapies,*** engineering students from Tec's Mexico City campus **Victoria de León** and **Miguel Ángel Ogando** have won **gold** in the **UNESCO IIIDA** competition, becoming **the only Mexicans** to win the gold medal.

The project was the winner at the ***Future Designer International Innovation Design Awards* (IIDA) & *Science for SDGs Innovation Contest***, becoming **the first in Latin America** to carry out a project of this kind that **combines robotics with society**.

*"This is an **international** competition, which aims to evaluate **innovation** in projects of all kinds, from all over the world,"* says Victoria de León.

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The UNESCO-backed prize is held annually and aims to receive the most innovative and sustainable proposals and designs from young people in science to achieve the United Nations Sustainable Development Goals.

*“The call was held in Shanghai, where a project selection was made. We are very happy because we were the **only Mexicans** to win **gold** at an **international** level.*

*“**I had been checking my mail for days, and it arrived one dinner time like a Christmas present**. It was really important for me to **be able to represent the Tec**,”* says Victoria de León.

https://youtu.be/TEy-J6G7-ts?si=F_LYNdVEVP3M-LQQ

Empathic engineering: A project with a human approach

Merging Humans and Tech: Robot-Guided Virtual Therapies is a proposal for **robotic-guided therapies**, using NAO robots to help rehabilitate people with motor or intellectual disabilities.

The robots are programmed to **virtually** instruct patients to exercise, a format the project adopted in the wake of the pandemic, which has allowed it to serve more people, making this type of **technology accessible** to **different parts of Mexico**.

*“With the help of a physiotherapist, we developed a **special therapy program** which can treat various physical conditions, but the **innovative part** is that it’s the robots providing the therapy,”* says Victoria.

The project’s main goal was to go beyond the technical aspects of engineering, focusing on integrating it as a **solution** to **social problems**.

*“It means a lot to us how this project raises awareness among the team. Usually, engineering is all about hard **skills**, **processes**, and **logic**, but we aim to generate sensitive and empathic engineers who are aware of their society,”* says Victoria**.**


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*“It’s no longer just thinking about **programming**, but about how to do it in an **empathic** way to help patients; in this project, we are encouraging engineers to have a more social approach,”* the student emphasizes.

*“In our team, we aim to **orient** our projects towards **people**, to **entertain**, **help, and educate** through technology. It’s something that’s missing in almost all areas. We always think about making everything faster and more efficient, but we also want profiles of people who propose ways to help others,” says Victoria.*

Collaborations and social commitment

Victoria de León and Miguel Ángel Ogando are part of the **SHIRAG** group for research and application of human robotics with social impact, under the mentorship of Tec research professor **Edgar Omar López**.

The initial idea for the project started more than eight years ago, with a proposal from a former member who is now an advisor to the **SHIRAG** group. Some time later it was formalized as a project and received collaborations, partnerships and improvement methods.

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Merging Humans and Tech: Robot-Guided Virtual Therapies has involved several partnerships and collaborations, which have enriched its development and postulation in different fields, including **science**, **psychology**, and empathic treatment of patients. They now aim to take it to settings that allow them to have medical feedback.

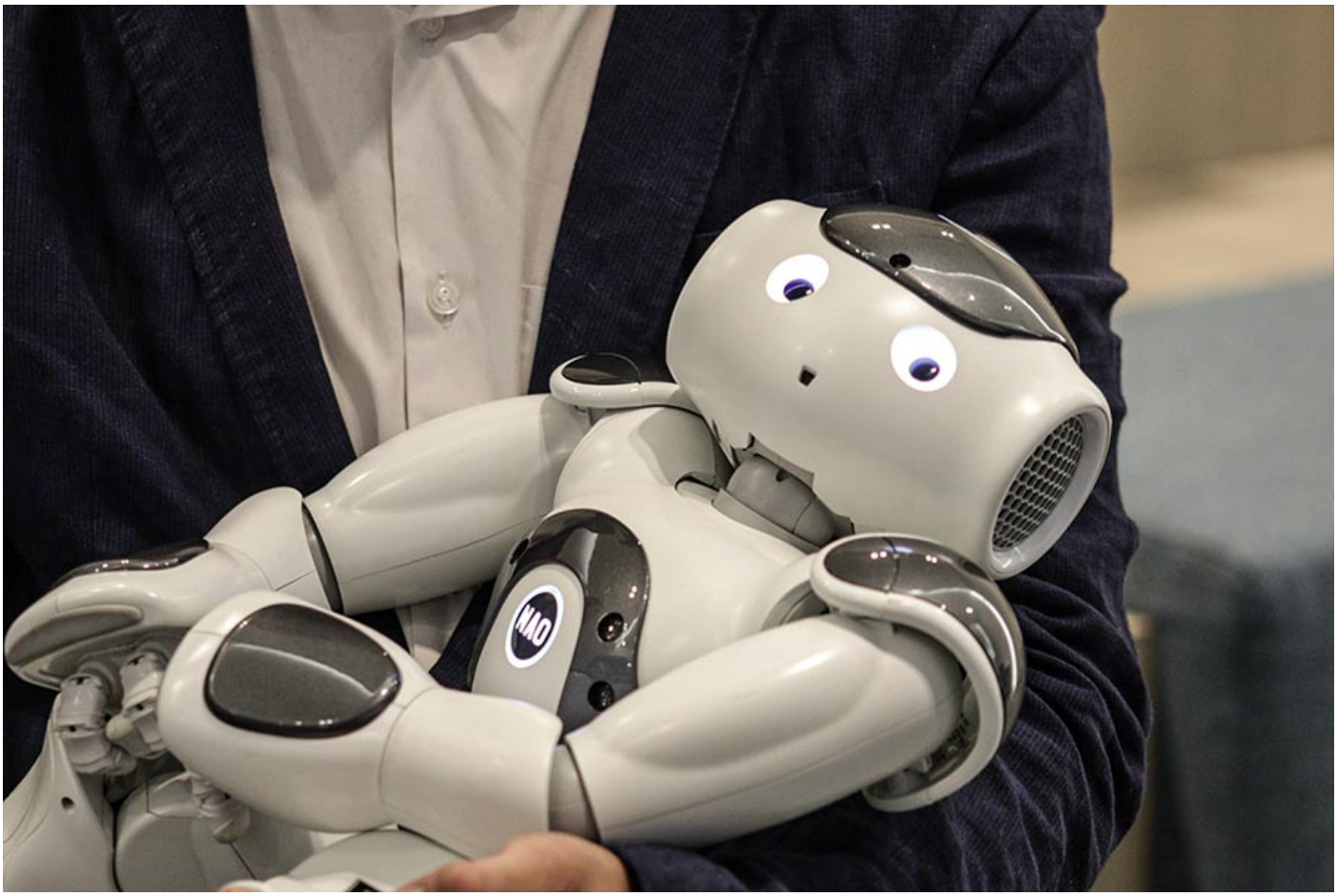
In addition, there was a collaboration between the **UNAM Faculty of Psychology**, in which they jointly developed better methods to **measure patient care** in therapy.

*“We began with the **National Rehabilitation Institute** in 2021. After that, we continued to collaborate with **FADEM** (a foundation that supports people with intellectual disabilities) and we continue searching for partnerships,”* says de León.

*“In this project, we worked with a physiotherapist as our main support, but we aim to take this to the **next level**, to develop a model that can achieve a **direct relationship between the physician and the engineer**,”* says Victoria.

The main idea is for the **doctors to learn how to program the robots**, provide them with the knowledge, and create a relationship of **mutual learning and support**.

They also point out that they have a **paper** in the **process of being published** that will quantitatively and qualitatively measure their patients’ process, from their **physical progress** to their **emotional state**.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