

Tec de Monterrey makes top 3 in global hackathon with autism project



[Tecnológico de Monterrey](#) has won **global third place** in the [2022 Hackathon](#) hosted by [SAS](#), an advanced analytics software company.

It earned its place with a **doctoral thesis** project that uses **artificial intelligence** to help doctors with the **nutritional diagnosis and treatment** of children with [autism](#).

This **algorithm** also aims to help parents with diets and verified information to **prevent the gastrointestinal complications** that are common with autism spectrum disorder.

The Tec was the only Mexican university to participate in the global event, in which 75 countries competed, and was the **best project from Latin America**.

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Tec de Monterrey makes top 3 in hackathon

SAS Hackathon is an online event in which mentors and participants collaborate for a month to refine and develop a project with **software tools**.

The team consisted of leader [Dr. Mariel Alfaro Ponce](#) and doctoral student **Juan Oláquez**.

Their idea was to develop an algorithm called [Autistic Life Changer](#) that helps doctors to diagnose and treat autistic children.

This project made it into the top three in three categories: health, natural language processing, and the Americas region.

Nelly Marina Elizalde, an SAS representative at Tec de Monterrey, explained that the SAS academic program came to Latin America a year ago. From the outset, they started working with universities.

“The Tec’s Autistic Life Changer project is just the kind of initiative that SAS is looking for, in which data science is used to help vulnerable populations,” she said.

The SAS Hackathon received over **1,300 nominations from 75 countries**. In the end, **70 teams were selected**.

Elizalde mentioned that the team was mentored by **Natalia Summerville**, a Tec graduate who works at SAS.

“It was a team that stood out for three reasons: accurate and responsible data collection, project management and execution, and the ability to explain their project,” she said.

That’s why SAS plans to write about the Tec de Monterrey team’s success story.

<https://www.facebook.com/SASsoftware/photos/5683746951659326>

Data Science to improve the health of children with autism

The Tec de Monterrey team allows doctors to improve the **diet of children with autism in a personalized way**.

It has recently been discovered that children with **Autism Spectrum Disorder (ASD)** have a **different gut microbiota** than the general population, according to the latest information from the [Biocodex Microbiota Institute](#).

The **microbiota** is a set of microorganisms that work as a barrier to protect the body from other carcinogenic, toxic, or harmful organisms.

Any alteration in the diet of children with ASD can therefore cause **gastrointestinal problems**.

Tec de Monterrey’s artificial intelligence team collaborated with the [Institute of Biotechnology](#) (IBt) at the National Autonomous University of Mexico (UNAM) to use its **genome sequencing of gut microbiota**.

*“We processed the data in the SAS system, after which it was possible for doctors to receive more accurate information to create a **customized and precise treatment**,”* said Mariel Alfaro

The algorithm lets the specialist know the number of bacteria that are harming the patient so they can prescribe **antibiotics** to strengthen or lower the levels of certain bacteria.

In the future, they aim to allow specialists to improve the **diet of children with ASD** based on the algorithm data.

In addition, a language processing part was programmed so that parents can ask a **chatbot** any questions.

“Responses are programmed to read symptoms and direct them to verified information. It also tells them when it’s necessary to go to the doctor,” Alfaro said.

A Data Science Hub project

The **Autistic Life Changer** team was made possible thanks to the support of the [Data Science Hub](#), an ecosystem of organizations, universities, entrepreneurs, and technology companies that aims to develop innovations and startups.

“Mariel Alfaro approached us in search of specialized software and we looked for the opportunity to use it for free with SAS,” says [Juan Arturo Nolasco Flores](#), Director of the Data Science Hub at Tec de Monterrey.

The Hub’s job is to find opportunities and resources to solve a problem in the area of data science.

“The fact that this team will be in the top three shows that we have the talent to excel in international competitions,” he said.

At the moment, the project is still being developed and is generating new applications for autism. However, it is still at a very early stage for developing as a startup.

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