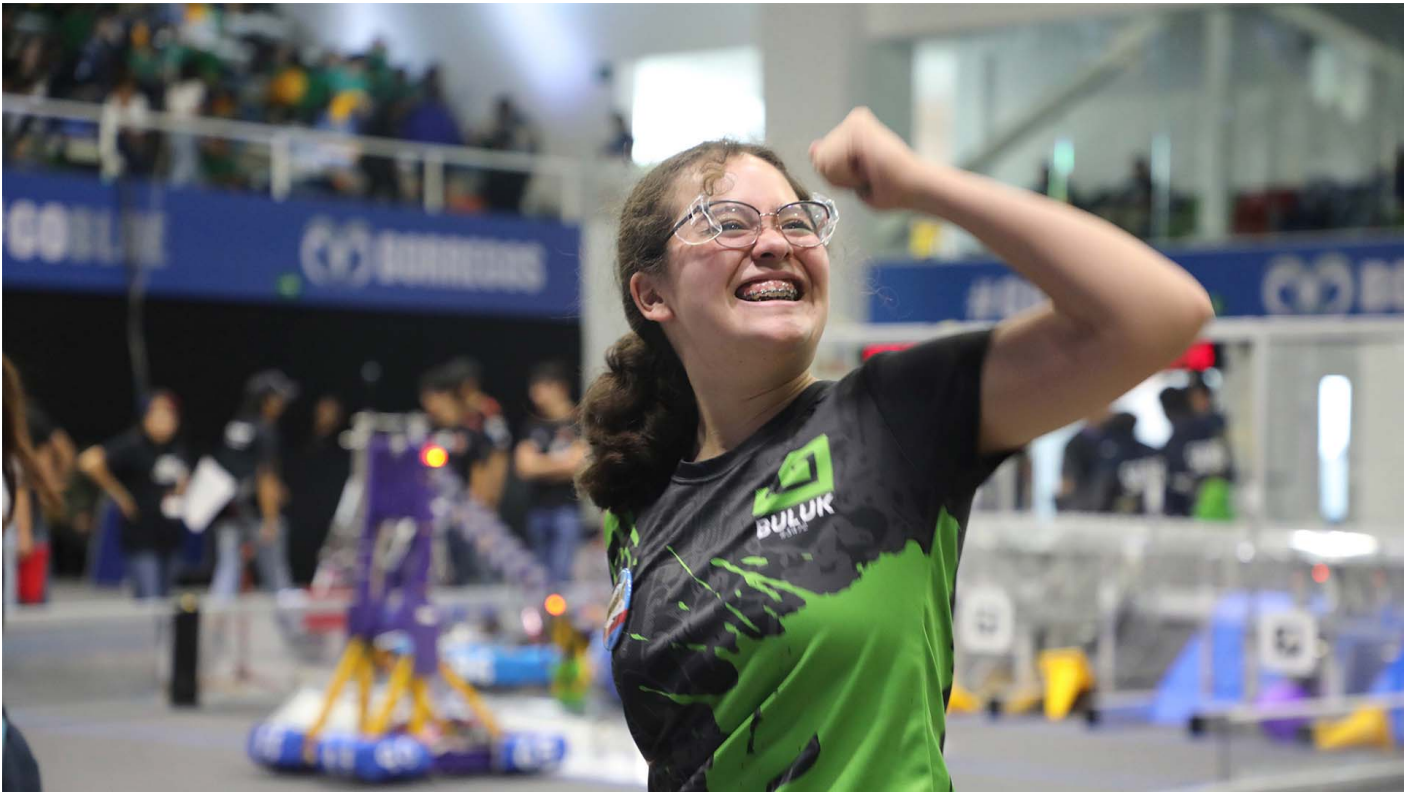


# The girl who is allergic to metal but loves to build robots



When **Romina Lugardo Pérez** wears zip-up boots, she is very careful to make sure her skin **doesn't come into direct contact with the metal zippers**. Otherwise, she will have a trail of welts along her leg at the end of the day.

Romina wears plastic watches and covers the buckle with several coats of clear varnish. She avoids wearing earrings, necklaces, and bracelets.

Her **glasses** and **braces** were carefully selected so that they do not damage her skin. Although **she is allergic to metal**, she cannot stay away from it because **designing and building robots is her passion**.

Romina belongs to the **Buluk** robotics team, from **PrepaTec State of Mexico**.

She is the **only woman** in the **mechanics** area and **is the captain** of this team, which participated in a regional **FIRST Robotics Competition** at Tec de Monterrey.

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**The origin: an autoimmune disease**

**Romina has had constant medical monitoring since childhood** because she was diagnosed at the age of three with an **autoimmune disease** called [Henoch-Schönlein purpura](#).

This disease causes **inflammation of the small blood vessels of the skin, intestines, and kidneys**.

The swelling may cause the skin to bleed or break out in welts from the navel down.

In Romina's case, the inflammation was internal and **paralyzed her intestines**. For a long time, she was bedridden until she was diagnosed and **successfully treated**.

She now goes once a year to check that the disease remains in remission.

Shortly after overcoming this disease, her parents noticed that she **was especially sensitive to metals**. Any earrings, bracelets, or metal clasps gave her **dermatitis** on her skin.

However, this has never slowed her down.

*"Since my purpura diagnosis, I have focused on taking care of myself by exercising. Before the pandemic, I did ballet and made it to master level."*

And although the **metal rashes are very itchy**, she has decided to **cover her accessories** with several coats of **clear varnish** or **to wear gloves** when she is in contact with robot hardware for long periods of time.



/> width="900" loading="lazy"> **The origin of her passion**

**Romina was born with a special passion for machines.** Her maternal grandmother is the **first female industrial engineer** to graduate from the **National Polytechnic Institute**.

What's more, everyone on her mother's side is an engineer. On her father's side, her father is an engineer, and the rest are musicians.

In addition to robotics, Romina also plays bass guitar, sings, and performs in musicals.

Although she was interested in mechanics earlier on, she believes it all really started when she was 11 years old. **RobotiX**, a company set up by a **Tec graduate** who teaches **robotics classes**, came to her elementary school.

I took **programming** classes with them, and at that time I was already the only girl. *"Monday was my favorite day because it was **robotics day**."*

The **Buluk team from PrepaTec** was mentioned a lot in RobotiX because it had qualified that year for the **FIRST Robotics World Championship**.

*"I was very excited and wanted to get into the Tec because I knew it was a very good robotics team, and I wanted to be there."*

[https://www.instagram.com/p/ConCy9RrAGz/?utm\\_source=ig\\_web\\_copy\\_link&igshid=MzRIODBiNWFIZA=](https://www.instagram.com/p/ConCy9RrAGz/?utm_source=ig_web_copy_link&igshid=MzRIODBiNWFIZA=)

The first thing she did when she went to the Tec was to search out the team and join it, but the recruiting process was complex.

*"They came up with a challenge, like the ones in FIRST. They gave us a week to make a robot in the **OnShape program**. After assembling the robot, it had to be able to pick up and place blocks on a base and throw balls."*

Romina had to learn a program she didn't know to design it, and she ended up on the team. She had learned how to program and put together a robot at RobotiX, but she wanted to learn more and applied to join the **mechanics** area.

Once she was there, they asked her in her first lesson to disassemble the previous year's robot. She was and is still the only girl in that area.

*"Getting into mechanics was difficult because I'd never picked up a drill in my life, so to keep up, I'd go to the lab in my off hours and put in and take out drill bits to get up to speed. It took me a semester to learn everything."*



/> width="900" loading="lazy"> **The mechanics captain**

In the beginning, Romina did not know how to solve problems that arose with the machine, but she tried hard to reach the level of her classmates who were in their last semesters.

She became faster and more agile at performing all kinds of mechanical interventions in real time and was committed to making a good robot for the **FIRST robotics competition**.

*“There were five of us in mechanics. We’d arrive at 6 a.m. and make a little progress, go to class, and not go home until 10 p.m.”*

In addition, she studied for several certifications, such as an **advanced online course in industrial automation** by **Festo**.

Last summer, she won a **scholarship from Microsoft and the Televisa Foundation** for a program called **Tecnolochicas Pro**, in which she learned front-end programming (web pages) with languages such as HTML and CSS.

And this semester, **she went on an exchange program to Italy** to take physics and engineering courses at **Ferrari** and the **Ducati Foundation**.

What she is most passionate about is creating pieces made and designed by her for her robot.  
*“Gears are something that fascinates me because of how they are so important to movement and their relationship to force.”*

These skills have made her stand out at **Buluk**, where she was recently voted captain of the mechanics area.

*“As captain, I’m always looking for more girls to join mechanics, and I teach new members everything I know with the love that I would’ve liked to have been taught with when I was new.”*

Romina **wants to study aerospace engineering** in the future and work at **NASA**. She is already preparing for her future application to **universities abroad**.

*“As captain, I’m always looking for more girls to join mechanics, and I teach new members everything I know with the love that I would’ve liked to have been taught with when I was new.”*

### **Going to the FIRST competition**

Romina and the **FIRST robotics team** participated in the regional **FIRST Robotics Competition** in March at the Tec’s Monterrey campus.

However, destiny took Romina to the FIRST World Championship in Houston, Texas, to assist the **Balam 3527** team from **PrepaTec Esmeralda**, after the team invited her.

**FIRST** (For Inspiration and Recognition of Science and Technology) is a **robotics tournament** conceived as an **aspirational sport** to interest **children and young people** in science.

This year’s competition, aimed at young people aged 14 to 18 and titled the **CHARGED-UP** challenge, is dedicated to the UN’s Sustainable Development Goal 7: **affordable and clean energy**.

More than **3,300 teams from 31 countries** participated this year in the various regional competitions in the hopes of going to the world championship in Houston, which was held in April. **Mexico** sent 85 teams, **36 of them from PrepaTec**.

The **FIRST Robotics Competition** was created in **1989** by **Dean Kamen**, a **leading inventor and entrepreneur** who created the **Segway**, the two-wheeled vertical vehicle.

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