

GIRLS ARE UNSTOPPABLE



8390G



Christina & Julianna Chu
Markham, Ontario, Canada



CRITICISMS RECEIVED AT COMPETITIONS

These are just some examples of the negative comments my sister and I have received at competitions...

"OH MAN, WE WHY ARE WE WITH THE GIRLS?"
"IS SHE ANY GOOD?"
"CAN SHE REALLY DRIVE?"

"HOW OLD IS SHE?"
"WHERE IS YOUR ROBOT?
YOU NEED TO PRACTICE."



"HAH..LOOK AT THAT PURPLE. CHUNKY ROBOT."
"HUH...THEY MUST REALLY LIKE PURPLE."

CRITICISMS RECEIVED AT COMPETITIONS

...and the parents of these kids would tell us to not take what their kids say to us seriously, and to "let it go", by explaining to us that "this is what boys are like" and that "boys will be boys".



It's just boys being boys.
This is what boys are like.



BEING PROUD TO BE GIRL POWERED



☆☆☆
Being in the male dominated field of robotics, my sister and I initially felt intimidated when faced with both conscious and unconscious biases. We experienced the following from both teams and attending adults: open ridicule due to our robot's colors and questioning of our ability. We were forced to stand up for ourselves.

I realized how important it was to be a role model to my sister and show her how empowering it can be to have a voice. She realized that being a girl, young and small did not limit her ability to succeed.

☆☆☆





I AM UNSTOPPABLE



Robotics helped me realize that using my voice gives me power; not only for myself but for others. I value the change I can make and inspire in girls, boys and even adults through the world of robotics.

Being Girl Powered is my superpower.



OUR VOICE



There were times when we questioned whether we were in the right place and worthy of participating in robotics. It was hard to not allow those hurtful words to create doubt within ourselves, but all those difficulties have made us stronger, made us work harder, and empowered us in the process. We realized how powerful our voice is, how we are worthy and how all of us can exemplify and advocate being Girl Powered.

OUR TEAM

Working as a team is key to our success. We are the Chu Sisters.

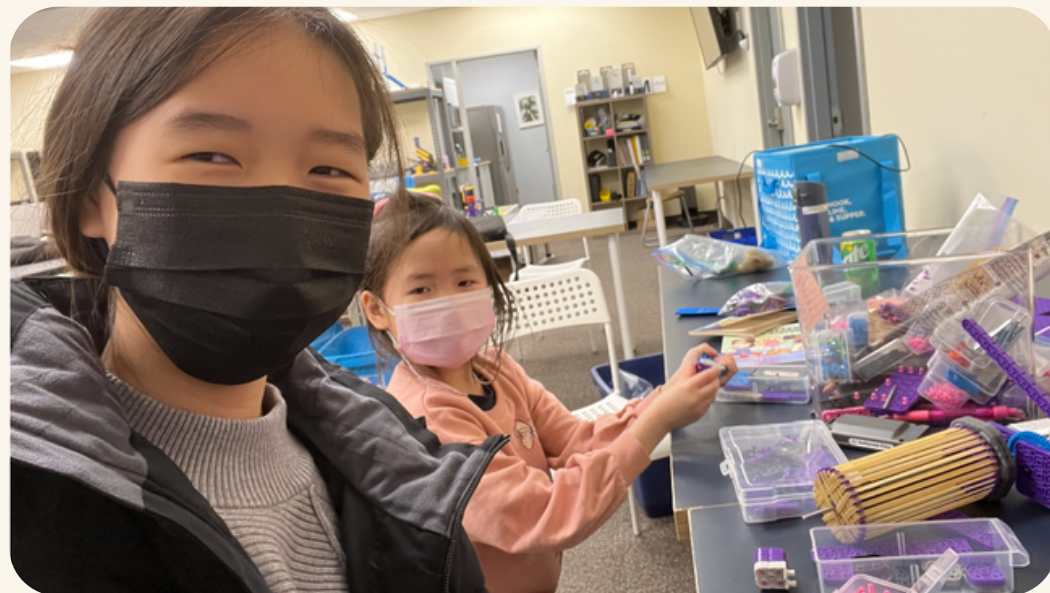
We are part of Caution Tape Robotics, Team 8390G in Markham, Ontario, Canada. My name is Christina and I am 13 years old. My teammate is my sister, Julianna, who is 7 years old.

We both work together to research different mechanisms that are needed and then build and test our robots. As I have previous experience, I take the lead on the engineering notebook and programming including the autonomous. I have enjoyed teaching my sister and she has learned very quickly. She invents design ideas I never thought of before. We both participate in strategizing and practice driving together.



TEAMWORK

Julianna loves driving and she is amazing at it. She had skills even before starting robotics as she loves playing video games and building with Lego and vex pieces on her own. She builds multiple different drive trains and components. She loves programming and always comes with a positive and collaborative attitude to work. I feel lucky to be her partner.



We never thought that we would be doing robotics together on the same team, but the pandemic resulted in this great opportunity for us. We won the Judges award in a competition in November and the Excellence award in a competition in December. As proud as we were of our achievements, they have not been the greatest rewards of pursuing robotics. Finding a voice, empowering our team and others and making valuable memories have brought us fulfillment.

☆ GIRL POWERED ☆

Being Unstoppable

What Girl Powered means to me is strength, empowerment, growth and inclusivity. To my sister and I, it means that the possibilities for our future are endless and we can achieve anything. Being a girl is something to be proud of; not something to conceal. It makes us want to eliminate stereotypes, pursue our goals openly and inspire other girls to do the same. It gives me hope for a better future for everyone.

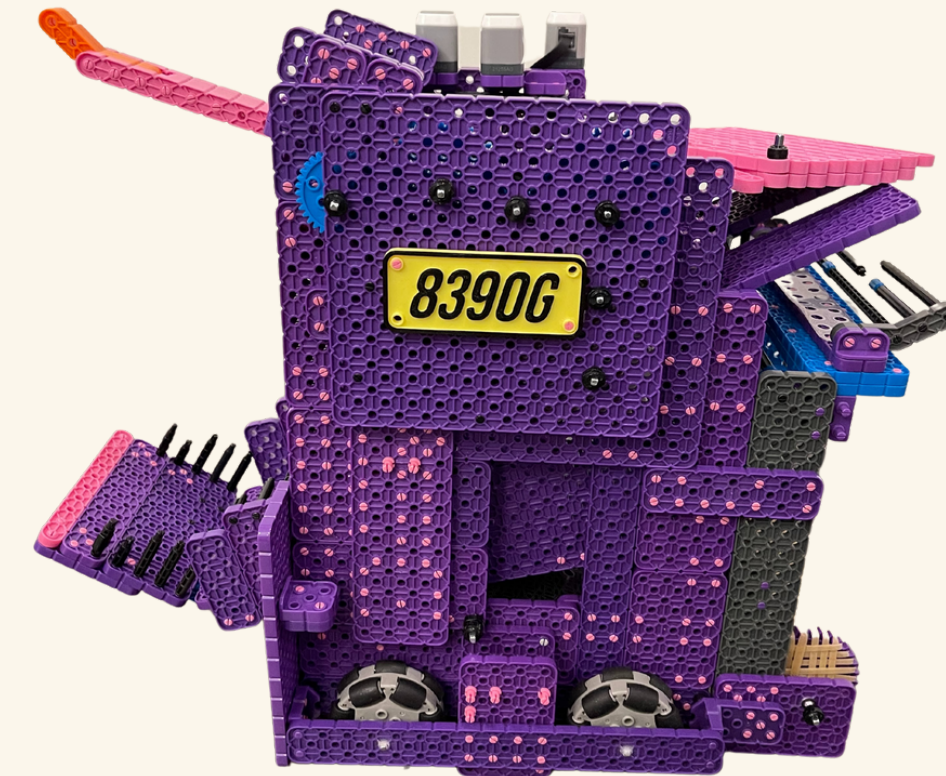




BEING FEARLESS



We take a fearless and fun approach to robotics, even down to our color choice of robot pieces. We are the Chu sisters and our robot is proudly purple and pink and fondly named Pinky Tops. Just like a lion roaring, you can't miss spotting us on the field with our bright colors. Other teams have underestimated us and criticized our robot design, but we do not let fear stop us. Although it has been difficult at times, these situations have given us an opportunity to learn and grow. It has been an invaluable opportunity to educate other teams and coaches on the value of having a girl powered mentality. Girl-power requires us to practice inclusivity for everyone. By respecting each other on and off the field we fulfill our responsibility of being a good citizen of the world.





BEING A ROLE MODEL

Not only am I on an **all girls** robotics team with my sister, I have also had the privilege of being asked to be the coach's assistant of our school's robotics team. I participated in rebuilding the program after the pandemic shut it down for 2 years. **I help** coach 10 teams ranging from Grades 5–8. These include a co-ed team, all girls team and all boys team. I really enjoy helping and **supporting** their learning and growth while **supporting** my school. **I love coaching regardless of gender**, but I do appreciate being able to **show the girls that we can do robotics and do it well.**

BEING A ROLE MODEL

My sister hopes to be a good role model, not only for girls, but for **younger kids** as well. She wants kids of all ages who want to do robotics to have the chance to do so. Our school currently starts robotics for kids in grade 5 and above. She hopes that through her **contributions** to our team, **working hard, practicing driving a lot, and showing that she can perform well,** that our school will begin to **offer robotics to kids younger** than Grade 5, such as herself.



IMPORTANCE OF INCLUSIVITY



At both school and club competitions there are many girls and parents who approach us and tell us that they are inspired by our team. They want to get started or get back into robotics because of what they see us do and how we carry ourselves. We realize how important it is to be an ambassador representing what Girl Powered means. It is our goal to educate and inspire the next generation of girls and show boys that through collaboration and teamwork, we can achieve the best results for everyone. Robotics is not just about the robot, it is about the opportunity it provides for us to be a part of positive change. Collaboration with other teams, regardless of gender, is important.

IMPORTANCE OF INCLUSIVITY

 **WORKING TOGETHER**



 **THE MEANING OF WINNING**



We define winning as trying our best, communicating and collaborating. What happens on the field lasts only 1 minute, but what happens off the field is more powerful. We are all shaped by our experiences and interactions with each other, so the power is in us to represent the best versions of ourselves to help inspire others.



DIVERSITY OF PERSPECTIVE

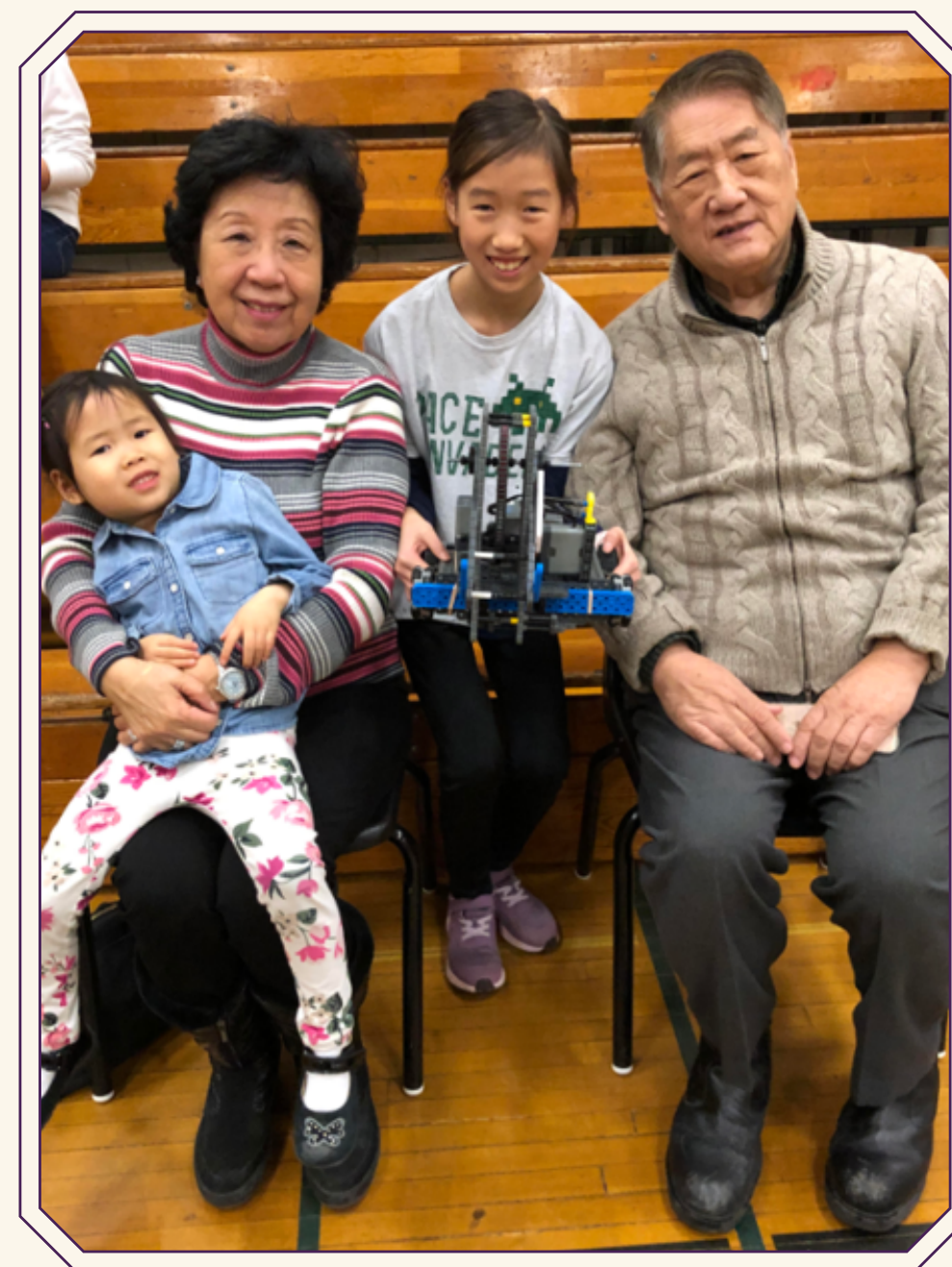
Diversity of perspective is important to success in our growth and teamwork. We must respect other opinions and collaborate, this will lead to innovation. Exploring other people's ideas will open up opportunities for exponential growth. Their unique ideas and perspectives will create further innovation. For example, even if a particular component does not work well, we can support each other and use the experience as a learning opportunity to build the next component. Without diversity, there will be no advancement and everyone provides a voice that is unique and important.



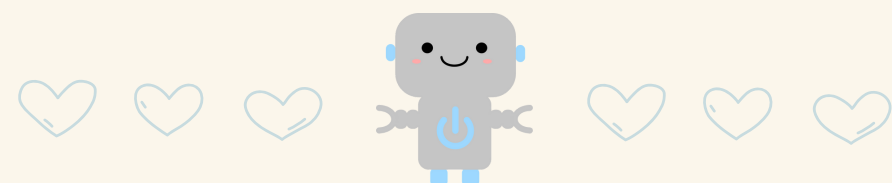
☆ OUR STEM ROLE MODEL ☆

OUR STEM ROLE MODEL IS OUR GRANDFATHER, JOSEPH CHU.

He is an Electrical Engineer with a Masters in Computer Science who worked on the early mainframe computers for IBM and at banks. Over 50 years ago, he left China as a young man and moved to England to study. He had cultural and language barriers, yet he was able to adapt and receive his masters degree. His work includes writing computer code for managing financial information for big banks and that code is still being used today.



Above are my **Grandfather**, Grandmother and my future partner, Julianna, cheering me on at my first robotics competition when I was in grade 5



🌟 OUR STEM ROLE MODEL 🌟

OUR STEM ROLE MODEL IS OUR GRANDFATHER, JOSEPH CHU.

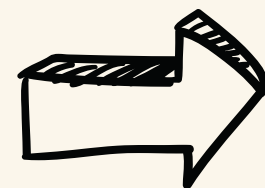
Even today, his expertise on mainframe computers is still required. His journey in STEM inspires me to create my own journey but not only that, my Grandfather recognizes that **gender and culture should not be barriers to be participants in STEM** and has always encouraged my sister and I. He pays for our robotics parts, club fees, and trips to competitions. He **exemplifies what it means to be Girl Powered**. He is an advocate for our Girl Powered team, he cheers us on at our robotics competitions, and is looking forward to traveling with us to our first out of country competition. He empowers us with his words and **constantly encourages us no matter if the competition goes well or not** and is so excited to see our growth. He knows first hand that working collaboratively, supporting and advocating for a future that is girl powered is the future.



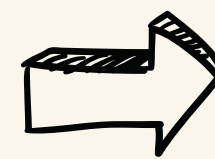
MY GIRL POWERED JOURNEY

But I refuse to let the negative comments be my truth, and I stand tall. My voice is my power.

In the beginning, I didn't know if I could do it.



GP sheild



Now, I want to pass on what I have learned and continue to be an advocate for a girl powered world.



I am Unstoppable

We are unstoppable

BEING GIRL POWERED

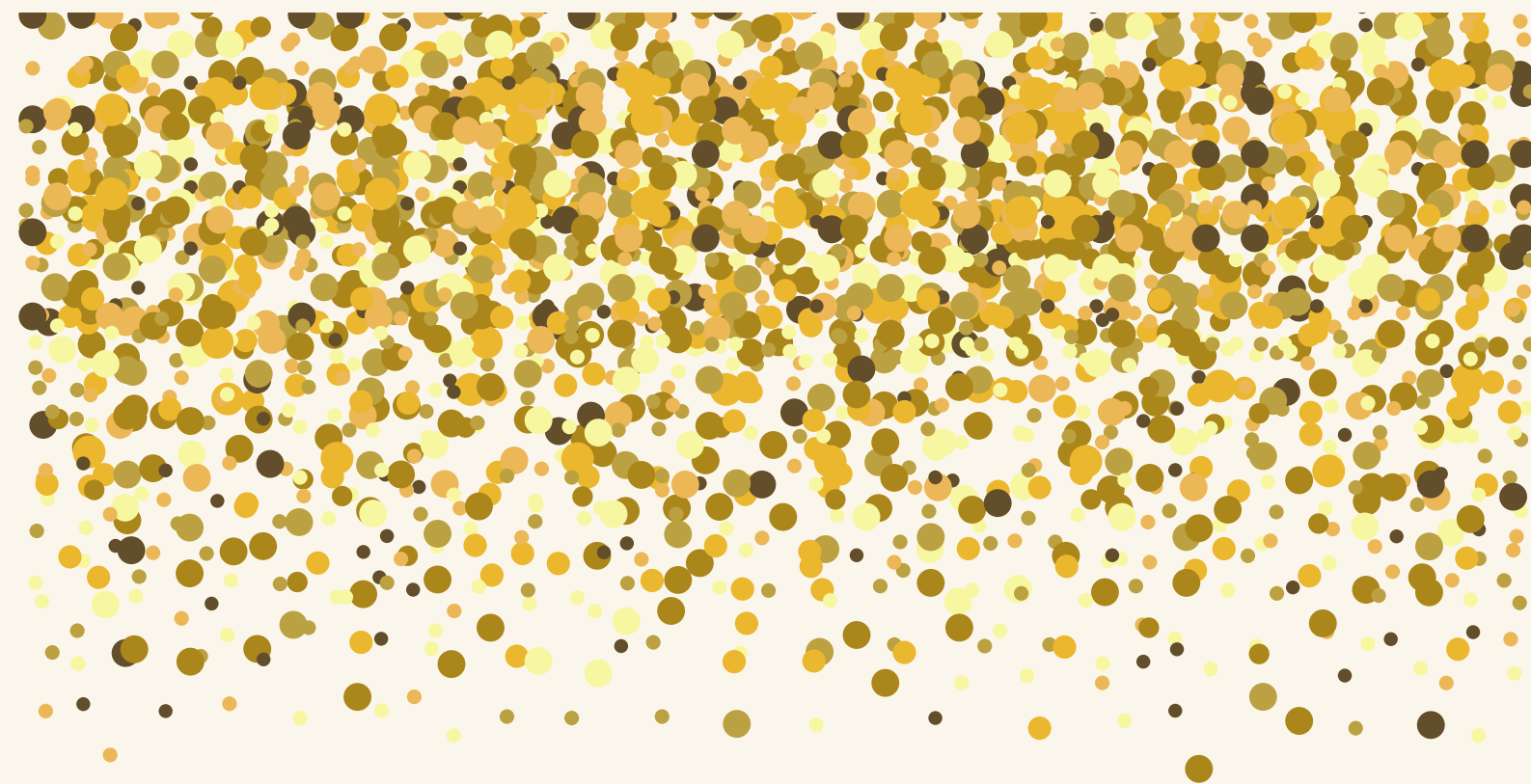


We all have a **choice** to be an advocate and role model to support a world where girls are empowered, included and given opportunities. What happens on the field lasts only 1 minute, but what happens off the field is more powerful. We have the choice to be the best versions of ourselves to help inspire others.

I am girl powered and I choose to help build a girl powered world one step at a time.

Who will **you** choose to be? Will you too, be **girl powered**?





Come join us

THE CHU SISTERS

Be unstoppable
together

GIRL POWERED

AUTHOR: CHRISTINA CHU

TEAM: 8390G VEX IQ

PRESENTATION: GIRLS ARE UNSTOPPABLE