



ROBOJACKETS

COMPETITIVE ROBOTICS AT GEORGIA TECH



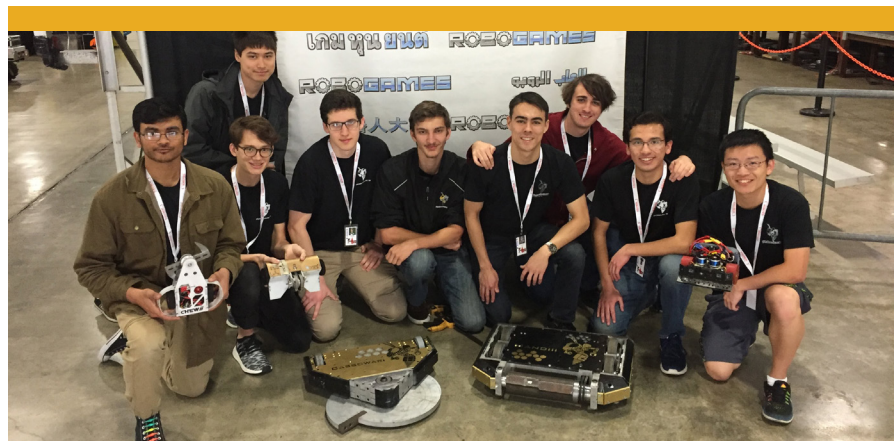
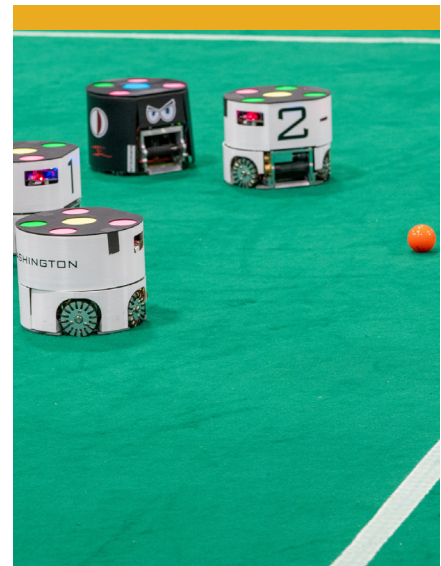
Sponsorship Information Packet

2020 - 2021

We strive to
promote, educate, and advance
the field of robotics.

RoboJackets was founded as a club at Georgia Tech over 20 years ago. From one small group of students interested in combat robotics, we have grown to over 300 students, faculty, and alumni who are committed to advancing the field of robotics. Our members work year-round to compete in international collegiate robotics challenges and support local STEM communities.

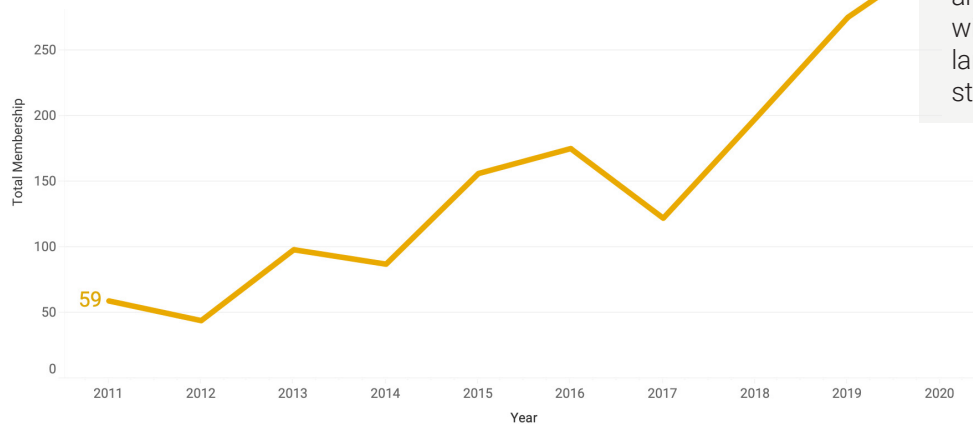
As an organization, we believe strongly in our mission statement: promote, educate, advance. RoboJackets encourages its members to immerse themselves in the RoboJackets experience by advancing the field of robotics through our multifaceted approach. We strive to raise awareness for cutting-edge technology in robotics, encourage the next generation of engineers through community involvement, and challenge technical boundaries by competing in competitions all over the world!



Take a look at

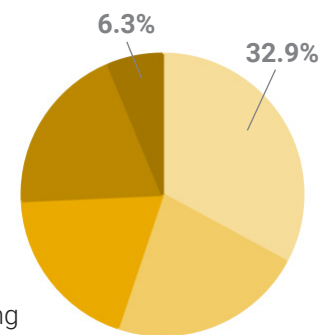
RoboJackets by the numbers.

Since 2011, our membership has grown by over **445%**.
Now, RoboJackets is a thriving organization with five different competitive teams developing a wide range of robots.



323 members

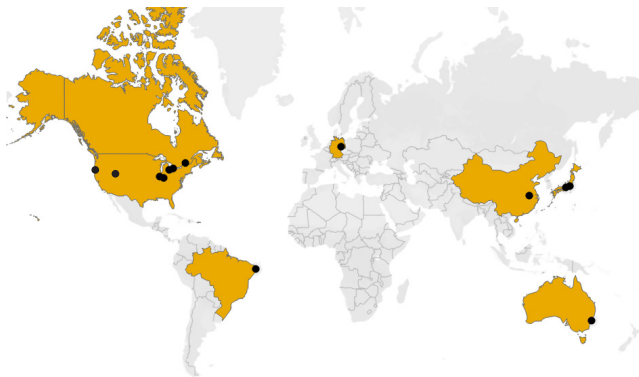
are divided amongst 5 teams, with BattleBots being the largest. Fitting for a club that started with combat robots!



Team
BattleBots
RoboNav
RoboCup
RoboRacing
RoboWrestling

In contrast, RoboWrestling accounts for only 6.3% of our members. However, they were **just founded a few months ago!**

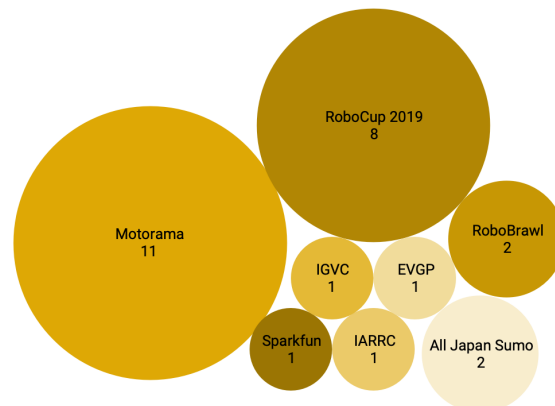
Where We've Been



In the past six years, we've sent teams to **seven countries**; in 2019, we traveled almost **20,000 miles** to our competitions.

RoboCup and All Japan Robot-Sumo yielded the furthest distance traveled, with their 2019 competitions in Sydney, Australia and Tokyo, Japan, respectively.

Robots Sent to Competition



In 2019, we fielded **26 robots** in competitions around the world.

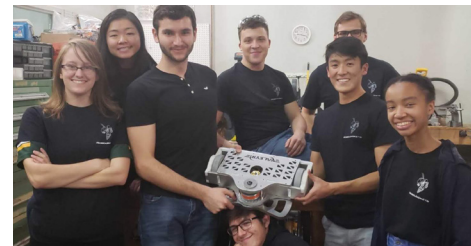
Though IGVC, EVGP, IARRC, and Sparkfun only have one robot each, the subsystems required for each competition are complex and demanding.

We are home to **five different competitive teams.**

BattleBots

The BattleBots team designs custom manual combat robots which aim to disable or destroy their opponents. The team focuses on stress analysis, mechanical design, and manufacturing.

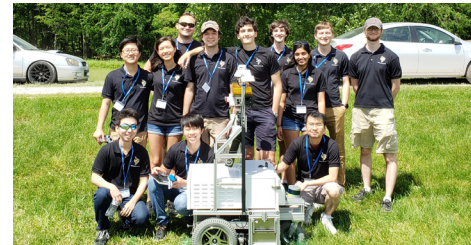
2nd place at RoboGames (120 lb.) | 3rd place at Motorama (3 lb.)



RoboNav

The RoboNav team focuses on autonomous navigation and offroad driving through an obstacle course. The team focuses on perception, mapping, and path-planning algorithms.

1st place in IGVC design competition | 3rd place overall



RoboCup

The RoboCup team competes in the Small Size League (SSL) of RoboCup, an autonomous robot soccer competition. The team focuses on artificial decision-making and multi-agent cooperation.

Only American team to compete in RoboCup SSL



RoboRacing

RoboRacing focuses on high-speed autonomous navigation through a track. The team works on two different sizes of robots, with one being RC car scale and the other being a full-size go kart.

Three 1st places at IARRC | Two 1st places at Sparkfun AVC



RoboWrestling

The RoboWrestling team competes in the All Japan Robot Sumo tournament, which involves autonomously pushing an opponent out of a ring in order to win the match.

Only American team to compete in All Japan Robot Sumo



Our members go through training to gain **valuable skills and experience.**

RoboJackets has multiple avenues to pass down knowledge to new members, with the most notable being our general training. We have created a program that uses a focused curriculum to give new members the skills they need to contribute to our teams. After training ends, our new members get rolled into our projects and begin to tackle real issues, with older members acting as mentors.



Throughout our members' time in RoboJackets, they learn various mechanical, electrical and software skills and tools, which allows them to contribute to not only our teams but in a professional environment as well.



RoboJackets has provided me with real-world engineering experience, beyond what I learned in the classroom. I credit the projects and training to helping me gain technical background I needed to succeed during my internships.

- Arvind Srinivasan, RoboCup

Mechanical

- Autodesk Inventor
- Part design
- CAM design
- Stress calculations
- Finite element analysis
- CNC machining
- Rapid prototyping and conventional machining:
 - Manual mills
 - Lathes
 - Waterjet
 - 3D printing

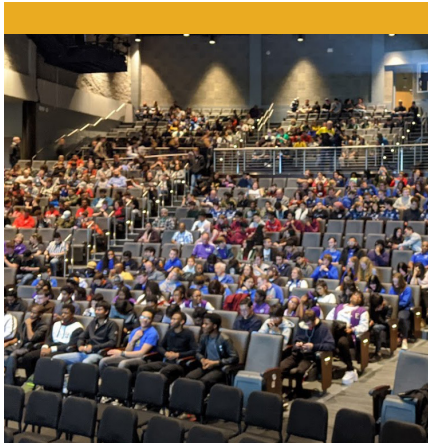
Software

- Specific tools and languages:
 - C++
 - Python
 - GitHub
 - CircleCI
- Artificial intelligence
- Multi-agent planning
- Computer vision
- SLAM
- Machine learning
- Sensor fusion

Electrical

- Microcontrollers and FPGAs
- Embedded systems firmware
- Autodesk EAGLE PCB design
- Board assembly
- Debugging using test equipment:
 - Oscilloscopes
 - Digital logic analyzers
 - Multimeters

Our members work with other groups to **promote robotics within our community.**



RoboJackets hosts the Georgia FIRST FRC Kick-Off. This event is attended by over 1,200 students and features the competition announcement along with robot-building workshops.

As volunteers...

We serve as a critical juncture between Georgia Tech, corporate sponsors, and the STEM community in Georgia. Through over 1,000 hours of service across the organization, we impact upwards of 4,000 students.

As mentors...

We mentored teams of high school students which placed second in the GA State Championship and 34th at the World Championship. Additionally, we partner with The Children's School (TCS) to guide middle school students through the process of building their own combat robots!

As leaders...

The RoboJackets community produces leaders that have managed dozens or even hundreds of people. Student leaders manage sponsorship relations and team budgets totaling upwards of \$100,000.

Our members also gain unmatched experience, technical skills, and passion for the field.



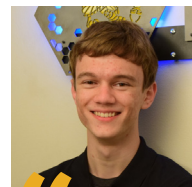
*Wallace Gray (right),
BattleBots*

“Mentorship has been a pillar during my four years here. Every year, we have a deep impact upon youth robotics. I'm thrilled to have been a part of that by putting my time toward not just my future but the future of others as well.”



*Marine Maisonneuve
(right), RoboCup*

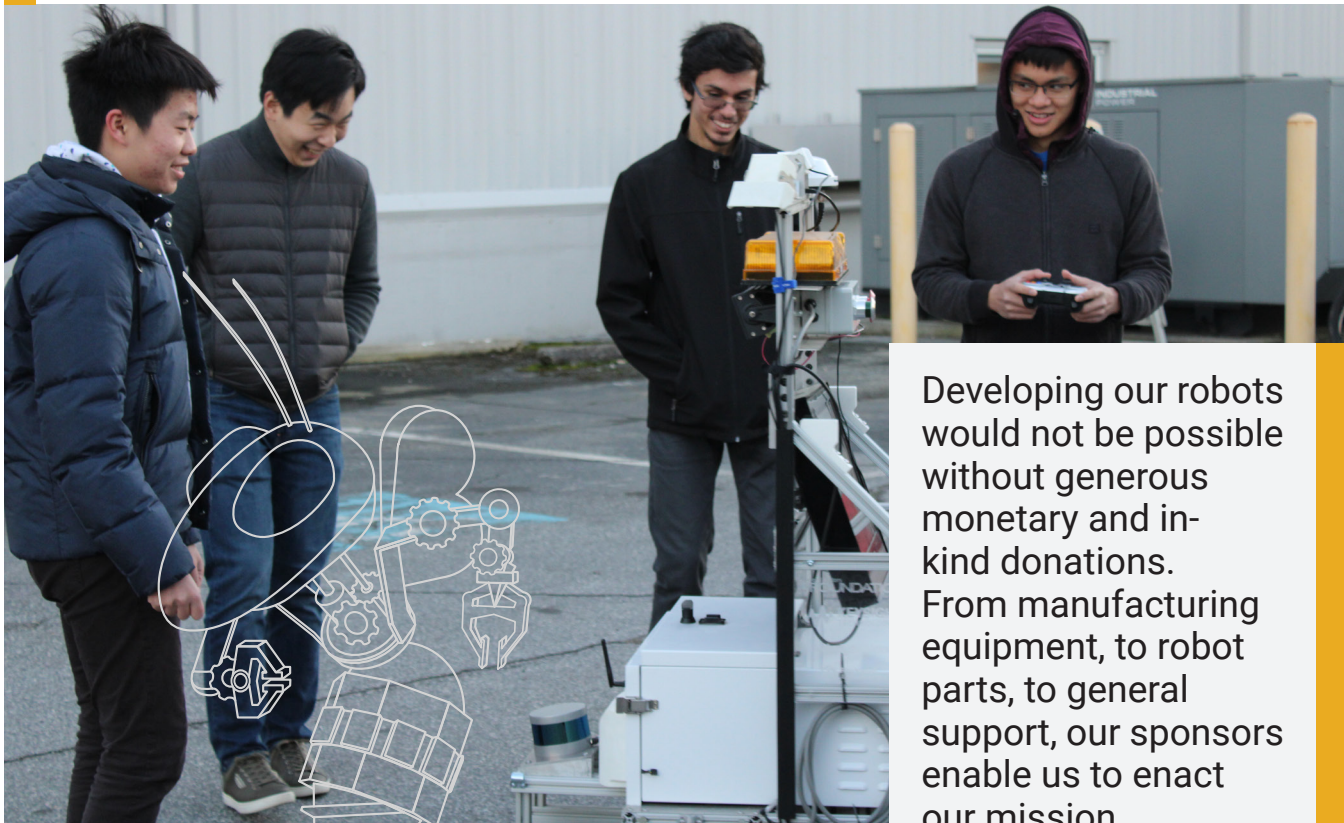
“RoboJackets gave me a place where I belong. I have made great friendships, developed new electrical skills, and learned to manage a team of over 40 people. RoboJackets is where I learned to combine engineering and leadership.”



*Kristaps Berzinch,
Alumnus*

“RoboJackets provided an opportunity for me to take what I learned in the classroom and apply it to real-world problems, and it prepared me to work on a multidisciplinary engineering team better than any class I took.”

We continue to
promote, educate, and advance
the field of robotics.



Developing our robots would not be possible without generous monetary and in-kind donations. From manufacturing equipment, to robot parts, to general support, our sponsors enable us to enact our mission.

“RoboJackets BattleBots is proud to partner with TCS to present the Robo-Wolf Pack Afterschool Program. While the BattleBots subteam is constantly advancing robotics, we also value connecting to the BattleBots community. By mentoring aspiring engineers in middle school, we not only strengthen our connection to such a vibrant community, but also excite these young students about engineering and robotics!

- Nico Castro, Program Lead

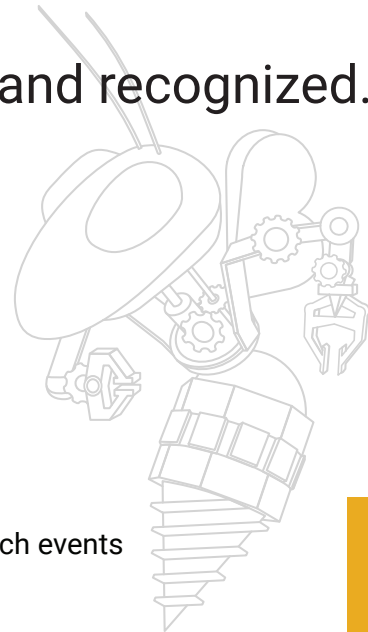


Nico, far left, working with three TCS students and a fellow mentor in the RoboJackets workshop.

Any level of support

is appreciated and recognized.

We cannot continue to empower local communities and push the technical envelope without the generous donations from our sponsors. RoboJackets uses funding to build robots, send students to competitions, and provide resources to the K-12 robotics community. Monetary donations go through the Georgia Tech foundation, making them tax deductible. RoboJackets recognizes both cash and in-kind donations equally.



Platinum

\$20,000 +

Gold benefits and...

- Opportunity to present at outreach events

Gold

\$10,000 +

Silver benefits and...

- One additional annual recruiting session with the team
- Personal introduction to team leaders and senior members

Silver

\$5,000 +

Bronze benefits and...

- Access to RoboJackets resume book
- One annual recruiting session with the team
- Logo on RoboJackets robot

Bronze

\$1,000 +

Friend benefits and...

- Logo displayed in RoboJackets workshop
- Logo on RoboJackets team shirts
- Access to RoboJackets e-mail list

Friend

\$200 +

- Tour of the space
- Logo on RoboJackets website



If you or your company are interested in pursuing a partnership with RoboJackets, please contact us. We look forward to answering any questions you may have during a tour of the shop space or a call with RoboJackets leadership!

email: hello@robojackets.org

website: robojackets.org

Thank you to our current sponsors!

Platinum



The George W. Woodruff
School of Mechanical Engineering



**Student Government
Association**

Gold



• **A P T I V** •



Silver

Velodyne LiDAR®



JOHN DEERE



**Rockwell
Automation**

Bronze



Weller®

Friend



MiSUMI **maxon**



**BRADDOCK
METALLURGICAL**