

## Chairman's Award - Team 6907

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2022 - Team 6907

**Team Number**

6907

**Team Nickname**

The G.O.A.T

**Team Location**

Shanghai, Shanghai - China

**Describe the impact of the *FIRST* program on team participants within the last 3 years. This can include but is not limited to percentages of those graduating high school, attending college, in STEM careers, and in *FIRST* programs as mentors/sponsors.**

With FRC, we have acquired strong passion and skills in STEM. Our team members play an active role in various innovation competitions. For example, we won prizes in two citywide competitions in Shanghai that focused on creativity and real practice. With FRC, we have enhanced our skills in business, management and communication. All of our team members who choose to study abroad have entered the top 50 universities in the USA. Some alumni have become *FIRST* volunteers after graduation.

**Describe your community along with how your team addresses its unique opportunities and circumstances.**

We are affiliated to a well-known public high school in Shanghai. With our school's support and publicity, we have held over 30 *FIRST* and/or STEM related lectures and workshops in other different middle schools. In a leading city of STEM in China, we hosted 4 FRC Christmas Luncheons, 3 Summer Gatherings and the first FRC Shanghai Technical Conference to exchange FRC experience. We continued to co-host the FRC Shanghai Technical Conference, helping other schools with advertising and contacting.

**Describe the team's methods, with emphasis on the past 3 years, for spreading the *FIRST* message in ways that are effective, scalable, sustainable, and creative. How does your team measure results?**

Our way to spread the *FIRST* message is by throwing lectures and workshops in more than 40 schools in Shanghai, where we share what our students have learnt from *FIRST*. We also publish articles to share our progress in our workshop. We keep updating translated JVN blogs, tutorials on fundraising, and start new series to introduce FRC gaming of the past 7 seasons and to share the inspiration of Ri3d. With our effort, our account attracts more than 1900 followers and more people to join in *FIRST*.

**Please provide specific examples of how your team members act as role models within the *FIRST* community with emphasis on the past 3 years.**

We gave about 30 lectures to raise public awareness of STEM education and introduced *FIRST* programs at local high schools. Our first female captain, Yuting Shen, one of the co-founders of 6907, continued in giving speeches and hosting events even after graduation, and she turned out to be an outstanding member of *FIRST* Shanghai Organization Committee. She started an livestreaming show for all Chinese teams. So far, all our captains will come back to help us in the construction after graduation

**Describe your team's initiatives to Assist, Mentor, and/or Start other *FIRST* teams with emphasis on activities within the past 3 years.**

We provide resources like practice fields to build and the robot for teams who need them. Our team supported FRC teams 7002 and FTC teams 1367 in various areas. We have established close partnership with them. We share resources, guide them to overcome technical and financial difficulties, help them in engineering and design, and organize events to exchange experience. Also, members of 7586 came to our studio to learn engineering courses with us and exchanged experience on media and recruitment.

**Beyond starting teams, what initiatives have you done to help inspire young people to be science and technology leaders and innovators? What results have you seen from your efforts in the past 3 years?**

As a five-star club of the school, our team help our school to build up a "STEM week" each semester for everyone to attend courses on STEM taught by our head coach. We hold interactive games to let students experience operating the robot. We hold workshops in other schools where we share our design idea and inspire students to design their own robots. We even added our FRC-related course to our school's optional courses and gave 14 lessons in one semester, all carried out by our teammates.

**Describe the partnerships you've created with other organizations (teams, sponsors, educational institutions, philanthropic entities, etc.) and what you have accomplished together with emphasis on the past 3 years**

6907 has built close friendship with other organizations. During off seasons, we co-hosted the FRC Shanghai Technical Conference, helping 6353 with advertising and contacting. 6907 members has kept close contact with our sponsors and showed them our achievements. We also invite them to give us lectures and visit our school to better involve them in our daily routine. We has hosted 4 FRC Christmas Luncheons and 2 Summer Gatherings, inviting teams and sponsors to exchange ideas and experience.

**Describe your team's efforts in the past 3 years to promote equity, diversity, and inclusion within your team, *FIRST*, and your communities.**

The male-female ratio of our team is approximately 1:1. Our 2022 student leadership team consists of 4 girls and 3 boys. 2 of our 6 captains are sophomore girls. We create workshops and special events for girls like Girls in STEM, trying to send a message that everyone can be whoever he/she wants to be here. Apart from that, we also have team members still in middle school but has a passionate heart, students from Japan, Singapore and America, and former members of dissembled FRC teams.

**Explain how you ensure your team and the initiatives you have created will continue to run effectively for the foreseeable future**

We have always considered long-term development of our team as top priority. Every year, we have a one-month orientation workshop where we offer engineering, programming, media and business courses to new recruits. We also have weekly workshop on engineering, robot design and coding during off season to train them. This year, We have added FRC-related course to our school's optional courses where our members have the main teaching job to consolidate what we learnt and teaching newcomers as well

**Describe your team's innovative strategies to recruit, retain, and engage your sponsors within the past 3 years**

6907 encourages everyone to find organizations and associations to be our potential sponsors. We seek them mainly from their official websites or company lectures in our school. Succesfully we developed and maintained reciprocal relationships with our sponsors. To better retain our relationship, we always inform them about our latest act and keep them updated. We send them our team-related gifts designed by ourselves and emphasize their help by writing articles on our Wechat official account.

**Highlight one area in which your team needs to improve and describe the steps actively being taken to make those improvements.**

As high school students, we sometimes find it hard to have a time when everyone is available, thus communicating efficiency became a task. To better strengthen our bond between each working group, we use our official account to record our constructing progress as well as birthdays and festivals we spend with our teammates.

**Describe your team's goals to fulfill the mission of *FIRST* and the progress you have made towards those goals.**

Our goal is to spread *FIRST* spirit to both FRC participants and the communities. We start involving our schoolmates in STEM activities. Then we spread to our community, arranging FRC related activities that everyone can enjoy including a city-run and a board game party. We make people interested in *FIRST*. Besides, our enthusiasm impressed our parents, teachers and sponsors. With our constant advertisement of FRC and *FIRST* spirit, they have become more supportive in youngsters' attempts in STEM.

**Briefly describe other matters of interest to the *FIRST* Judges, including items that may not fit into the above topics. The judges are interested in learning about aspects of your team that may be unique or particularly noteworthy.**

We have published nearly 300 articles on FRC tutorials for beginners, game analysis of the past 7 seasons, translated JVN blogs and tutorials on fundraising. Not only did we update and accomplish old series, we also started new series to

share the inspiration of Ri3d. Now our Wechat public account has 1900+ followers, reaching a total reading amount of 162k+ times. Besides, we are keen on taking FRC to other fields. 6907 has organized a FRC city run and a board game party with related clubs.

## Essay

Since our establishment in 2017, team 6907 has grown from a small group of four to over 200 passionate members and alumni. We grow with gains from FIRST, and now we give with strengths of FIRST.

### GIVE BACK TO FIRST

We have been trying to help develop FIRST community in China by holding events, workshops and an official account on social media.

#### Summer Gathering

In the summer of 2021, we held our conventional annual event, Summer Gathering, where 7 local teams were invited to gather together, creating an active and harmonious atmosphere, and each shared design ideas for their season robot.

The gathering was set to sum up our experience in the RCC offseason event in a rather relaxing tune.

#### Christmas Luncheon

In Dec 2021, 6907 hosted the fourth Christmas Luncheon as always after its success in RCC. Thanks to the recovery of the pandemic, under the circumstances of completing pandemic prevention measures, we invited 10 teams to participate in the luncheon, gathering over 70 students and alumni to communicate with each team about technique, medium publicity, etc. The Christmas Luncheon has always been offering a relaxed atmosphere to feel the charm of FRC and a proper chance of building or strengthening the relationship to every team in China, as well as providing a platform for seasoned FRCers to share knowledge and experience.

#### FRC China Technical Conference

On July 29th, 2021, we co-hosted the second FRC China Technical Conference in the No 2 High School of ECNU. Over 200 students from 8 teams in different STEM-based schools from Shanghai and the neighboring regions were presented. Teams exchanged their experience in programming, robot designing, team running, etc. Some also shared their experiences and lessons acquired during 2021 Robotics Championship China (RCC). The event enhanced the identity of FIRST spirit and collective cohesion among Chinese teams.

#### Social Media and Resources

We started our WeChat official account back in 2017. By far we've published 280 original articles, with a total reading quantity of more than 162k+ times and 1.9k+ followers. We recorded the unique memories of our days—glories, happiness, struggles, and other kinds of lovely sensations. We told our stories to our followers, wishing to spread the spirit of FRC—the bravery and passion to try and the determination and persistence to stick to our goal. Unable to participate in offline activities, we came up with new ideas, publishing tutorials on our WeChat official account, to help FRCers blend into FIRST community.

#### ·Continuing old series

We keep updating our old series. We have formed a translation squad of nearly 50 students to carefully translate interesting ideas on ChiefDelphi.com, JVN's Blog, WPILib, providing Chinese teams with valuable resources. We summarize a video course on Coursera platform called Fundraising and Development Foundations, teaching our members as well as our followers the skills of fundraising. We released a sponsorship handbook to assist other teams to properly solicit funds. During games and events, we print out copies of our sponsorship handbooks and team handbooks to teams for their reference.

#### ·Accomplishment and new attempt

We started the new article serial FRC Game Introduction last year, which includes introduction of rules, ingenious designs of robots and outstanding game strategies. This year, we stuck to this section and finished 7 seasons of FRC game introductions, starting from 2015 to 2021, providing analyses of representative robot structures as well. By finishing this serial, we provide newbies and even anyone who'd like to learn about FRC with a complete series of valuable reference to inspire creative and feasible robot designs. What's more, we never leave ourselves in secular stagnation. Now we are setting out for a new series, Inspiration of Ri3d. It focused on latest designs of robots of season 2022 Rapid React, which we hope will inspire teams when designing their own prototype.

### SPREAD STEM TO COMMUNITY

As we become more influential with our enthusiasm, we start to involve more people in STEM, by slideshows and activities.

#### Demonstrations and slideshows

Since 2019, 6907 has made demonstrations to people of different ages, spreading FIRST spirit and FRC both in and out of our own school. After 2021 RCC in Hangzhou, we made a speech at a flag rising ceremony where all teachers and students in our school participated in, introducing the competition and explaining FIRST spirit. In 2019, our team made demonstrations in up to 30 places from primary schools to high schools, such as Shanghai World Foreign Language School and Qibao Foreign Language School. Team members communicated with students of different grades and inspired them to design their own sketches of FRC robots, so that people of different ages were exposed to FIRST spirit and FRC. Besides, our team went to the International Division of Shanghai Middle School, delivering a speech and sharing our special experiences in RCC, which aroused interest in FRC among the students there.

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Our influence was not limited in Shanghai. In 2019, three of our team members and a mentor flew to Shanxi, China. They introduced FIRST programs to local students to raise the low awareness of STEM education. We also helped to establish 7002, the only FRC team in Shanxi, providing tips on how to find sponsors and cost reduction, and gave them our sponsorship handbook for reference. We also shared our experience in engineering, programming and media, while members of 7002 also shared their experience with us. We kept in touch with them to help them through both technical and financial predicaments.

### Activities and Workshops

We made STEM widely disseminated throughout the campus. We cooperated with the City Orienteering Club, one of the most popular clubs on campus, and held an FRC city run. Students in teams completed several tasks related to FRC, such as questions about basic scientific and technological knowledge. In 2021, we hosted the girls-in-stem program on International Women's Day, encouraging girls to take part in robot-building and coding. We hosted a board game party with the debate club. By sharing opinions on technology developing problems through a simple debate, we aroused their interest in STEM topics. We have even added our FRC-related course to our school's optional courses in 2021. We gave 14 lessons in one semester, all carried out by our teammates.

We also promote STEM outside our campus. For the past two years, 6907 has made workshops in up to 30 primary and middle schools in Shanghai. By organizing activities like demonstrating LEGO Robotics and allowing students to actually operate them on their own, we hoped that students could experience and feel the joy of robotics. We provided not only introductions and instructions but practical suggestions on how to improve their STEM ability. In November 2019, we held a resounding exhibition of STEM in Huangxing Park to introduce STEM to passers-by of all ages. We attracted a crowd including young kids with their parents, teenagers at the same age, and even elders. Witnessing people of totally different ages but brought together by STEM and robotics, we were confident and thrilled to claim that STEM was for everyone. This year, we cooperated with the charity club in our school to make connections with students in remote areas through letters by sharing STEM topics.

### EDUCATE OUR STUDENTS

Every summer, the seniors scatter away, pursuing their dreams around the globe. They are highly competitive in the university application, all been admitted to the U.S. top 50 and China top 5. Many considered their experience still helpful after stepping into society. We have our own ways to teach students and promote sustainability.

#### Learning through collaboration

6907 is a team. We collaborate, discuss, and even debate with each other to make our appearance on the field and on social media to be perfection. There're no boundaries within a team, girls work with boys, seniors work with freshmen, mentors work with students. We unite all team members, cutting across different professions, ages, and genders.

#### Learning through teaching

That's right. In 6907, not just mentors, students also teach. Every year, sophomores will take responsibility to educate the freshmen rookies in a one-month orientation workshop in July. Although the seniors have to focus on their academics and couldn't spend much time in 6907, the sophomores will always feel duty bound to teach the rookies all their knowledge about how to make 6907 better.

#### Learning through experience

Engineering is never just on paper. Experience and practice are indispensable on the way to become a talented FRC engineer. In 6907, every student, no matter they are an engineer, a programmer or even a media worker, they have plenty of opportunities to get their hands on 6907's robot. For example, in the programming section of our team, every freshman programmer has the opportunity to write the core parts of the season's program, every freshman media worker holds the key to produce the team's latest and most important media posts.

#### Learning through playing

6907 is never a school of nerds. It's a kindergarten of talented players. Every member gets to have their hands on the robot's newest functionality and understand how it works. We also organized school-wide activities such as competitions between mini Mecanum robots. Every student who comes to our event can get their own hands on the controller to compete with others.

#### Learning through summarizing

This year, we started summarizing our past experience into documents. We formed an engineering handbook after this year's orientation workshop. We also rewrote our sponsorship handbook, summarizing our new achievements and experience in holding events. We learn to face new challenges by reviewing our past shortage.