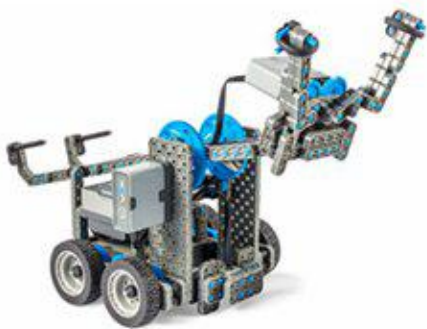


平凡之路



Ordinary Path



Encounter

这是一个神奇的故事。一般人都认为像 VEX 这样的工程类比赛都是男孩的赛场。然而，一切开始与 9 月 1 日。在这个别人收获果实的初秋，我们四个女生一起播种下梦想的种子。种子一点点在 VEX 的成长道路上萌发成长。它是我们对 VEX 的热情和坚持的结晶。那么，我们是如何走上这个战场（不归路）的呢？

It is an amazing story. Perhaps most people considers VEX as an engineering competition of boys mainly. However, all started in September 1st. In this autumn, our four girls plants our seeds of dream. The seeds sprout as we develop in VEX. It is a bumper harvest of our passion and persistence in VEX. Then, how we get into this battle, this ongoing path?

陈旻宇（小可爱）：我从小就对这方面产生了浓厚的热爱之情。为此，我加入了少科院，并成为了少科院的院长。这次来 VEX，希望我能学到更多的知识，收获更多的友谊和经历！我立志要成为像男生一样的女生，因此我将所有时间花在实验室中，拆机子，装机器.....

Minyu Chen, the little cute: I have grown strong passion and interest in automation. Hence, I joined the academy of sciences of the youth since I was very young, and became the dean. In VEX, I hope I could learn more knowledge, gain more friendship and experience. I have set my mind on becoming a boy-like girl. Therefore, I will devote my every possible time in the lab, constructing, dismantling...



任佺壬：我记得第一次踏入高中校园的那一刻起，或者更早一点，在一年多前，自我看完《超能陆战队》的那一刻起，我开始对机器人产生了浓厚的热爱之情。第一次走进高中校园，HII 机器人社的副社长来我们班推销机器人社。于是，下课铃声还没打完，我就一溜烟地跑到了机器人社。当时 vex 部的一个学姐看到我后惊呆了，跟副社说：“没想到还真有人来了！”当我站在那儿尴尬地环视着四周的时候，包子（我们社团的指导老师）进来了，他向我大致的介绍了一下 HII 机器人社。我坦诚地告诉他“我初中只参加过木工比赛，我会的唯一跟机器人有点关系的也许就是焊接了（不过后来我才知道，VEX 是不需要焊接的这个尴尬的事实）。”谁知道，他居然很认真地说：“没关系，有兴趣都能来。”刚好在那时，VEX 国赛缺人，什么都不会的我就这样神奇地开始参加 VEX 比赛了。——小小的独白：o, my god! am I dreaming?



Jiren Jie: I remembered the first time when I got into the school, or even earlier, a year ago since I watched *Big Hero 6*, I have had intense feeling toward automation. When first time entering high school, I got the news of recruitment of HII, our robotic club. Hence, I rushed to the robotic laboratory even the recess bell had not finished yet. A senior showed surprise and talked to the leader when she saw me: "Someone actually comes here!" Then when I stood here, feeling embarrassed, Baozi, the coach of HII appeared. (Baozi is a traditional food in China. Because the coach's round face looks just like the appearance of Baozi, so we call him that.) I told him honestly: "I only took part in wood-carving competition in the middle school. The only thing related to automation that I could do is welding. (Later I knew the embarrassing fact: VEX dose not need welding.) Surprisingly, he seriously said: "Never mind, anyone who has interest in it could come." Right at that time, VEX team was lack of members to compete in domestic competitions. So, even I was blind in this field, I had the qualification to come. "Oh my god! am I dreaming?"

Everything happened in my life is amazing and wonderful, and I will value every chance and become good and helpful.

金书文（大男神）：初中的时候我就开始参加各项这方面的比赛，包子邀请我高中来机器人社，所以我就来了，正好能在这个地方施展我的才华。初中我是做 FLL 的（大男神金书文初中已经去卡塔尔、新疆等地挖过石油啦！——比赛的另一种说法）也许是因为我在科技这种理工方面的发展和我对足球的热爱慢慢地在潜移默化中培养了我的性格吧，很多女生都变成了我的



小迷妹，把我封为男神，我也不知道到底是什么个情况~——小小的独白：做事男派怪我咯？

——being a tomboy is really cool, so my fault? For being so attractive?

Shuwen jin, “Prince charming”: In the middle school I have already taken part in related competitions. Baozi invited me to HII, so I came. It happens to be the right place for me to show my talent. I was engaged in FLL in the middle school (prince charming has already gone to Qatar、Xinjiang to strike oil ——it is our another description of attending competitions). So maybe it is my development in science and engineering that potentially influence and cultivate my characteristics. That is why I am called “Prince charming” ——lots of girls treat me as their idol. I do not know what happens exactly

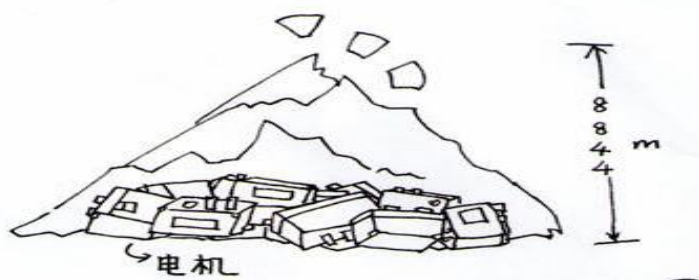
陆舒涵（宝宝）：我从小就特别对数学和物理感兴趣，自然也喜欢工程。我从小看了很多这方面的书，参观了很多航天机器博物馆。因此对这方面的理论知识还是懂一点的。但因为从小学了艺术，没时间再来参加机器人比赛。但心中依然愤愤不平，刚好进了高中有机会，就迫不及待地参加了。和朋友在一起动手搭建机器，将自小学到的理论知识转化为实践，感觉超级酷



Shuhan Lu, baby: I had a passionate interest toward Math and Science since my youth, so did engineering. I have done plenty of related books, visiting astro and machine museum. Therefore, I know a little related theory and knowledge. However, because I have learned art already, it is hard for me to find time participating in robotic competitions. That is why I join in HII, a precious and rare chance for me. Constructing machines with friends is fascinating to me. Moreover, it is pretty cool to apply my learning theory and knowledge into practice.

Initial construction

今天是我们第一天触碰机器，别提任佶壬有多激动和兴奋了。但是好景不长，还没到 10 分钟，什么都不会的任佶壬就被各式各样的工具和奇奇怪怪的零件搞得晕头转向了。要知道，任佶壬可是从来都没有用过螺丝刀等神奇工具的原始人啊！没办法，不会看螺丝刀大小型号的她开始死记硬背，先把拧电机的螺丝刀的颜色记住，然后再把拧螺丝的螺丝刀的颜色记住，就这样，她开始灵活地使用螺丝刀了！ps:后来的后来——胡浩扬和张有成这两个队长不知道肿莫（请问可以翻译成这种效果吗）想的，居然把大螺丝刀的头换到小螺丝刀的头，小螺丝刀的头换到大螺丝的手柄上了！还好已经拧了一段时间的她有了手感，不过一开始还是出了不小的 bug(此处有笑抽表情)再来看看跟她同班的金书文童鞋，在初中已经开着豪车去新疆和卡塔尔挖过石油的她（她边比赛边挖石油），这些工具在她眼中简直是小 case，轻轻松松地拧上了螺丝，实在是太帅了。要知道，她可是班里的男神哦，嗯，在耍帅发面她确实把好多男生都比下去了。无线电大神，少科院巨魔陈旻宇花了 20 分钟的时间就把所有电机都调成变速电机了。所以，这天的主要成就就是——把电机全部调成了变速电机和金书文搭了个地盘的两侧以及任佶壬记住了大小螺丝的颜色。



☞ The variable speed motors pile up so high like Himalayas.

Today is our first day to construct our robot. Jiren is so excited, but not lasting for long, less than 10 minutes, she gets confused by all kinds of tools and strange mechanical parts.

Important—— Jiren is a primitive who has not used any tools! No way out, she has to remember all sizes and shapes of screwdrivers. First keeps in mind the screwdrivers that tighten the motors, then memorizes those screwdrivers that tighten screws by distinguishing their colors. In that way, Jiren could use screwdrivers flexibly.

Later, Haoyang Hu and Youcheng Zhang, our two leaders, somehow, confuses the head and the handle of screwdrivers. Jiren at fist makes some bugs, but later she finds ways to figure out. As for Shuwen, the past experience helps her. The tools seems to be easy for her. She is so handsome as she easily tightens the screws. In this field she is more engaging than real boys. Our talented girl, Minyu, takes only 20 minutes to adjust all motors into variable speed ones. In conclusion, today's achievements are: changing the motors, building the two sides of base by Shuwen, and for Jiren only, memorizing and distinguishing the tools.

电机已经调好了，开始组装底盘...

任佶壬（神奇）：原来装轮子不是那么简单地用轴从中间穿过直接插到孔里啊！

金书文（一脸无奈）：废话。你这样装还有地方留着呢，轮子会掉出来的呀，要用螺丝锁住，里面套上垫片减小摩擦。

陈旻宇（开森）：“这样就好了啊！诺，就照着这个搭吧！”

任佶壬（开森接过）：谢谢

陈旻宇（笑）：不客气，小意思～（heart）

The motors have been adjusted. So we starts to build the base.

Jiren, feeling amazing: “ Turns out that installing wheels is not so easy as simply using a axis to pass the hole.

Shuwen,: “Of course, or the wheels will fall down. We will use screws to lock. Inside there is a gasket to decrease the friction.

Minyu, happy face: “ That is right.! Construct like this.

Jiren, another happy face: “ Thanks~”

Minyu, smiling: My pleasure~(heart~)

抬升结构装起来真的好麻烦！——当然，这也许只是对任佶壬而言是这样的。要一套好大齿轮，金属垫片，塑料垫片，套进两个5节大c型板，再在外部装上电机。

任佶壬（经过一番努力奋斗，花了几十分钟，终于装好了一个齿轮）兴高采烈地举起齿轮，开心地说：“我装好啦，你们看！”

金书文和陈旻宇转头呆呆地望着，感觉时间仿佛静止...

陈旻宇：亲，你装错了...

不要紧，在重做呗！第二次，任佶壬终于完美地装好了一组齿轮！



The lifting structure is so difficult. ——Or maybe, only to Jiren. It needs to link large gear, metallic gasket, plastic gasket, two five-part C-shaped panel in order, and install motors on the outside.

After nearly half an hour, Jiren raises her head and hilariously holds the gear: “ See! I made it!”

Shuwen: “Actually...it is wrong...”

All right...Again...

Jiren finally makes a set of gear in the second trying.

我们打算在底盘上装上齿轮联动，这样就可以提高车子运行的效率，计划是这样的，在底盘上装六个变速电机，在抬升结构上装四个普通电机（但后来比赛证明了齿轮联动的结构有问题，将会在后面提到）。当底盘和抬升结构装好了以后，就得把它们合起来装在一起，但因为抬升结构中的横杠挡住了孔位的一部分，所以将拧螺丝这件事情变成了一件比登天还难的任务。她们俩花了好长时间，最终终于大力出奇迹，将两个装置连在了一起。



We plans to install gear linkage on the base. It can increase the efficiency of the machine. The plan is, installing six variable speed motors under the base, and installing four ordinary motors on the lifting structure.(But the later competitions prove our structure of gear linkage has problems. It will be talked about later) When the base and the lifting structure are finished, they are combined. But because of the thick rod in the lifting structure obstructs some holes, later tightening screws becomes really difficult. Power makes miracle. Finally, girls finish the job.

铲子真得花了好长好长好长的时间和精力啊！

本来搭好的铲子结构是这样的：用L型板连接链条，下面用改良过的c型小型板（用锯子和榔头使它下面能触地铲起星星）。好不容易花了几小时搭好，有一天社长来检查，对这个结构很不满意。他表示要让铲子能自由停在任何一个角度。好吧，那就按他说的来吧，我们开始在L型板上人工添加限位。队长们开始使用高大上的武器——角磨机和电钻。（角磨机任佶壬一直不敢碰，因为害怕溅起的火花会破相...至于电钻，她上次做精工作业，不知道为什么，电钻一直在铝板上面划来划去，就是钻不进去。陈旻宇有一次正在用电钻做精工作业，结果包子进来对她说：小心点，这个钻头如果飞出来，可能会破相的。从那以后，她就再也不敢碰了。不过不知道金书文敢不敢用...）没办法，这里只能让男生们来完成啦。在L型板外侧用电钻和角磨机打好一个不大不小的洞，用螺丝套住，这样链条就能卡在里面了。胡浩扬打好洞了以后，

任佶壬开始依样画葫芦地装好链条，大功告成，车子算是完工啦。胡浩扬懒懒地躺在地面上，头上顶着包子。任佶壬激动地表示要先飙一下车。于是，程序员急急地把程序倒进后，她拿着手柄开始操作。胡浩扬扑登地坐了起来：“你千万不要开啊，你上次拿着手柄跟张有成打游戏，结果摩托车卡在角落里出不来！”“等一下，让我看一看搭的怎么样！”我按下手柄，然后...铲子上的零件全部都飞出来了（笑抽表情）胡浩扬恼火地说：你根本就没搭紧啊！叫你不要乱开车！”任佶壬（委屈）：我搭了好久的...明明是紧的呀！陈旻宇回头：哎，算了吧，你先回去做作业吧，我来搭吧！
就这样在不断地装错，重装的过程中，经过两个礼拜的时间，我们终于把两台机子的铲子搭好了。



Shovel really spends us countless time and minds!

The shovel structure should be like this if making in the right way: using I-shaped connecting chains, and using modified C-shaped small panel on the lower part. We spent several hours to construct, but the leader of our club was extremely unsatisfied when he came to check one day. He said that the shovel must stop at any angle. Then we started making what he asked. We manually added stop block on L-shaped panel firstly, and team leaders were using gigantic, powerful tools: angle grinders and electric drills. (Jiren has been afraid of angle grinders ever since. She fears the splattering spark will hurt her face. As for electric drills, she could not get a hole in the past experience without any reason. For Minyu, oneway when she was drilling, Baozi saw her and told her: "Be careful! Once if the head of the drillings comes out, your face will be ruined. Then she was scared stiff, and stopped her work. Since then, girls have been afraid of those two large tools. But we are not know for sure whether Shuwen could use them.) So, the work was on boys shoulders. Using drills and angle grinders to make a hole on the outside, then using screw to fill it, we can successfully attach the chains inside. After Haoyang finished drilling, Jiren started applying the chains to it. That's it! The machine was then finished. Haoyang was lying on the ground, and put his head on Baozi. Jiren frenziedly said that she wanted to try the machine. So, after the programmer quickly imported the software, she started controlling it with a handle. Haoyang stood up immediately, shouting: "Don't even turn it on! The last time you use the handle to play games with Youcheng, the motor was stocked in the corner!" "Wait! Let me see whether I built the machine rightly." I pressed the handle, and then, all components of the shovel was deconstructed. (Lmao!) Haoyang said angrily: "You are not making it tight and solid! Told you not to try the machine now!" Jiren said, as if she was crying: "I spent a lot of time on it!" Minyu turned her head and said: "Alas! Never mind! Go back and write your homework, I will rebuild it."

Again and again, rebuild and rebuild... After two weeks, we finally finished the shovels of our two robots.

经过多天的调试，车子终于大功告成，这时，我们队又迎来了一个女生——高二的漂亮姐姐陆书涵（虽然她跟我们一样大）。在她的帮助下，我们队的工程笔记本正式从中文版升级成为中英对照版。

Through several days' testing, our machine are finally finished. We welcomes another girl — a beautiful senior, Shuhan Lu (though she is in the same age with us.) With her help, our teams' engineering diary upgrades from only Chinese version to Chi-Eng version!



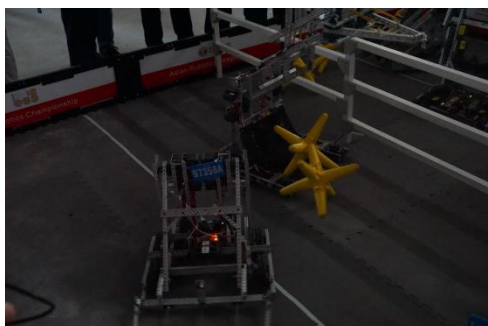
Asia-Pacific Robotics Championship

2016年12月1日，我们带上了两台机器人，工具箱（到机场托运的时候发现少了一盒工具箱（笑抽），不过还好亚锦赛上大家团结互助，在比赛上是对手的厦外甚至都借了我们不少工具，不如螺丝刀啦，螺帽啦等等），工程笔记本，当然还有人和脑子和比赛去最重要的手啦，浩浩荡荡地向东莞旁边的珠海进军。



On Dec.1st, 2016, we brings our two machines, toolboxes, engineering diary, and most importantly our hands and brains to Zhuhai, our competition place. (When arriving airport, we suddenly finds our we forget a toolbox in our lab.(Lmao!) Never mind! We unite as one! In the competition, even our rivals lends us lots of tools, like screwdrivers, screw nuts, and etc.)

亚锦赛的经历让我们这群小菜鸟们（中间还夹杂着巨魔）大开眼界。环顾了一圈，我们惊讶得发现，原来只有我们队还在用“冷兵器”铲子，其他队伍都早已从国赛的铲子进化到了夹子。（笑抽，配文：这还能够好好的一起玩耍吗）看来我们也应该与时俱进了。



The experience of Asian Champions is really an open eye for us freshmen(combined with giants) Looked about, we surprisingly finds out that we are the only team using shovels, something invented since upper Paleolithic, while others have innovated using fork-like device. (lol!Can't be friends!) It seems that we should keep

ourselves in fashion.

第一场比赛我们就被虐打了，比赛的时候临时出现了机器过载的问题。车子开了3秒钟就停在那里动也不动了。后面一连几场都出现了这个尴尬的问题。为了解决过载问题，第一天晚上，陈旻宇大巨魔干了一件特别厉害的事情：她熬夜拆除了齿轮联动装置，把变速电机全部转换成了普通电机，一个轮子对应一个电机。



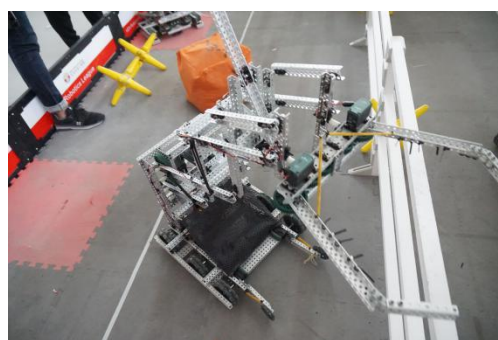
We are defeated horribly in the first round due to the overload of the machine. It runs for only 3 seconds, and then remains shutdown. Unfortunately, the issues occurs in several later contests. In order to resolve the overload problem, Master Minyu dose something extraordinary: she pulls all night to dismantle gear linkage, and replaces all variable speed motors with average constant speed ones, for one wheel attaching to one motor.



第二天比赛，过载问题的确减少了很多，但还是存在，就在我们百思不得其解的时候，我们的队友——金陵一中的老师过来帮我们改造机子。在了解了我们机子有多次底盘过载问题和一次抬升臂过载问题后，他说：“抬升臂的结构的橡皮筋绑错了。整个机子都是物理原理的体现，你们这个橡皮筋是一种杠杆模型，动力臂小于阻力臂了，就抬不起来，导致了抬臂过载。底盘过载问题可以用程序来解决。用PID程序，可以使电流在加速减速时不会一下冲为零，很有用。”通过他的

帮助，我们终于打赢了一场比赛。比赛的第三天，陈旻宇和胡浩杨就开始到处跑来跑去与别的学校交流学习了。比赛期间，我们与金陵一中、合肥六中、成都七中、东北育才等学校进行了交流，学到了不少新的知识，留下了他们的qq并计划寒假去合交流。

On the second day, the overload problems is very much ameliorated yet still existing. When we remains perplexed despite much thoughts, our teammates, teachers from Jinlin No.1 School, helps us amend the machine. After knowing that our machines have multiple overload problems on the base and one overload on lifting arm, he says: “The rubber band used on power arm structure tightens wrongly. The whole machine should be a representation of physical laws, and this rubber band is a lever. When power arm is shorter than resisting arm, the arm won't lift, and this caused overload. The overload of base can be solved using programming method. The PID software can effectively avoid electric current reach zero, and I believe it can be useful.” With his help, we finally win a match. On the later day, Minyu and Haoyang starts wandering around to communicate with other schools, and hopefully to learn some knowledge. During the entire competition, we exchanges ideas with Jinlin No.1 Middle School, Hefei No.7 Middle School, Northeastern Yucai School, and many others. Eventually, we learns a lot invaluable new knowledge and adds QQ of peers from other schools and cities. We plans to go to Hefei for further communication during the winter holiday.



Provincial Competition

亚锦赛回来以后，还有十天就是省赛了。然而，我们总不可能拿着亚锦赛上被别人暴虐的，每天都在过载状态中的机子去跟别人比吧，毕竟物竞天择，适者生存，于是，我们要干一项丰功伟业——用队长的话来吹嘘这就好比建党伟业（中国一部宣传爱国主义精神的影片）——我们要在这十天里搭两抬夹子！听到这消息我们震惊极了——但是，第二天包子又告诉了一个让我们大家想去集体跳楼的消息～

After coming back from Asian Championships, we had only ten days left for the competition in our province. However, we could not use the overloaded machine to compete with other teams. So our leader decided to build two machines in just ten days! The difficulty of this process could even be compared to the *Beginning Of The Great Revival* (a film for propagandizing patriotism). We were shocked—but the next day our coach told us something even more frustrating.

这天，包子把我们集体叫过去又开了一个小会，原来，他说，因为省赛报名的人不够，所以我们要自己队跟自己队做队友，每个队要有两台机子，两个操作手！也就是说，我们不仅要在接下来的9天内搭4台机子，还要训练出两个操作手！更重要的是，巨魔陈旻宇比赛当天要去模联比赛，不能当操作手，别的女生因为没有打过游戏，那就更不可能了，只能让唯一的四个男生来当四个操作手了。

That day in the meeting, our coach told us that we didn't have enough people, so we needed to combine two teams to one, but still had to build four machines and train two operators. More importantly, Minyu had a time conflict between MUN and this competition, for which she could not participate in the competition as an operator. Nevertheless, the rest girls had no experience and talent in operating machines, so we could only train the four boys as operators.

配图：want to die

没有指导老师，我们只好靠亚锦赛时联系的学校进行线上指导。在这过程中，有一所学校居然跟我们说只要我们花钱买他们的机子，他们就来给我们进行讲解。队长张有成一听到这个消息就很生气，我们拒绝了他们，开始照着比赛时拍来的合肥六中和人大附中的机器的图片依样画葫芦地搭好了一台背投式机器和一组平行机械臂。

Without coach, we had to rely on another school's online instruction. During this time, a school actually told us that as long as we buy their machines, they would teach us. Our leader Youcheng Zhang was very angry when he heard their requirement. We refused, and then began to build a rear-projection machine and A set of parallel mechanical arm according to the graph of Hefei No.6 High School.



陈旻宇：“今天任信任真是把我气疯了！她居然拿着大螺丝在拧电机！怪不得我想她拧了两个小时怎么还没装上去！”

任信任：哎，这件事也不能怪我啊，本来我确实是用小螺丝拧电机螺丝的，但是后来小螺丝掉地上去了，我不小心就拿了一个大螺丝...

Chen: I'm really mad at Ren. She unbelievably uses a large screwdriver to fix a motor! No wonder she could not fix it after two hours.

Ren: You cannot blame on me! I was using a small screwdriver to fix the motor, but then the small screwdriver dropped on the floor...As an alternative, I accidentally took a large one...

我们用单独的两个齿轮连接轮子(合肥六中告诉我们原先把所有齿轮套在一起的方法会容易过载,于是我们按照他们的指导进行了改进),终于搭好轮子了,装好平行四边形开始装电板和连线。

We connected wheels by two separated gears. (Students of Hefei No.6 High School told us that our previous way of connecting by all the gears was prone to be overloaded, so we made some improvement according to their guidance.) After setting up the wheels, we began to install Electrical panel and connect the wires.



“哎,这里怎么突然冒白烟了?”金书文发现了一个不可告人的秘密。“哎,真的哎!”只见一缕白烟从底盘上冉冉升起。“什么?”张有成跳了起来,“一条二转三烧掉了!”“那好像是我们唯一的二转三了。”陈昱宇难过地说。张有成——。。。

“Ah, why is there some smoke?” Jin found something really bad. “What?!” Zhang was really anxious. “That’s the only Conversion socket we have!” Chen said sadly.

经过 30 分钟的努力寻找,我们终于成功找到了一根二转三连了上去。
After seeking for thirty minutes, we finally found a Conversion socket.

架子终于打好了,现在开始操作。操作的时候又遇到了极头疼的问题,一个是长时间移动了以后平行四边形机械臂不平行了,还有一个是架子走着走着不知道为什么就弯了!经过检查,我们发现平行四边形机械臂没有搭好,只好重搭。但是走弯掉一直找不到问题,于是我们求助合肥六中。原来,因为底盘的孔位是方形的,无法很好地吻合,所以要装上黑色限位孔(黑色的三个孔连在一起的零件,具体也不知道叫什么),果然,装上以后,架子就再也不会走偏了(开心)

Eventually the machine was set up, we began to operate it. Unfortunately, two other problems emerged. Firstly, after long period of moving, the mechanical arms became unparallel. Secondly, the machine went off-route. After examination, we found the mechanical arms were not built correctly, so we needed to rebuild them. How about going off-track? We asked Hefei No.6 High School for help and found the problem. The hole in the base was square, which cannot fit very well, so we had to install a limit hole. As expected, the machine came back to normal.



END

任佶壬：以后肯定会学 stem 啊，因为我以后肯定会选择理工科，做理工科类的职业，毕竟霍兰德 16 种职业倾向调查里面它建议我去打鱼嘛（打鱼以及机械工程师）

Ren: I will certainly learn STEM, for I want to learn science and technology in the future.

陈旻宇：虽然我政史地特别好（傲娇），但是因为兴趣的原因，我以后肯定会学 stem，就是这样～

Chen: Although I'm good at liberal arts, I will learn STEM for interest.

学姐陆书涵：以后肯定会学 stem 啊，毕竟想学数学工程这方面嘛

Lu: I will surely learn STEM in the future, after all I want to learn Mathematics Engineering.

金书文：肯定是理工科啊，就是 stem，嗯，就是这样，不然你说我还能学什么

Jin: Definitely science and technology, that's STEM.

参加 vex 的经历更加激发了我们几个女生对 stem 的兴趣，以及未来学习 STEM 的决心。虽然我们四个女孩都早已决定未来学习理工科，可是以前对着领域的理解还不深刻。以前在课堂中都觉得这是四门独立的学科，而我们的训练也只局限于单一的纸上谈兵——刷题。慢慢在 VEX 比赛中领悟，成长，我们深刻体会到 STEM 是四门紧密不可分割的学科。他们互相依赖，互相借鉴，有着基本不变的共性。我们也意识到学习 STEM 不因只局限与理论，更应多动手操作，在实践中弥补理论的不足，在实践中更加深刻的理解原理。

The experience of Vex arouse our interest of STEM and the determination of learning it. Although we all decides to learn science and technology in the future, we have little understanding of this field. Previously we only think all this four courses were independent, and what we did was only doing work on paper. After Vex, we profoundly learn that these four courses are closely related. Besides, learning STEM should not be limited in theory, but also practice. Only then will we learn the principles better.

同时，当我们在实践中遇到困难，更应利用平时学到的不同学科的知识来解决。这个 girls' power 线上挑战赛正是一次用理论记录、总结、反思实践的良机。一开始我们看到这个课题心里都很困惑，不明白写故事与 VEX 比赛有何内在联系。在整理思路，回味经历时我们慢慢感受到这是一次总结反思的机会。我们一起回忆了从刚进实验室的懵懂，到制作时的激烈探讨博弈，再到在赛场中的齐心协力；我们一起总结了遇到的所有困难，如何解决，以及至今仍然存在的难题和日后的计划。

At the same time, when we meet troubles in practice, we should use cross-disciplined knowledge to solve them. This girls powered online challenge is right a chance to use theory to test our practice and reflect ourselves. At first we were all confused when we saw the topic, with no idea of the connection between Vex and writing stories. During the process of sorting out our ideas and experiences, we gradually felt that it was a great chance to reflect and summarize. We remember our ignorance when we first entered the lab, the intense discussion and the unity in the competition. We summarize all the difficulties, how to solve them, and still existed problems with plans in the future.



又到了一年的秋季，我们收获了友谊和智慧。我们还将继续播种下梦想的种子，在 VEX 的成长道路上，一路花开。

We harvest friendship and wisdom. We will sow the seeds of dreaming, flourish in Vex.

Credit Section

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Storybook Name: **Ordinary Path**

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