

# S.P.A.R.K.

NEWSLETTER: 29<sup>th</sup> APRIL, 2018



**ROBOCON  
INDIA  
2018**

**VJTI  
ROBOTICS  
CHALLENGE  
2017**

**INTERNATIONAL  
ROBOTICS  
CHALLENGE  
2017**

## Sardar Patel Automation and Robotics K'lub

Sardar Patel Automation and Robotics K'lub (S.P.A.R.K.) represents a team of students working diligently towards designing and fabricating Robots that not only complete specific tasks under the guidelines of the competition but are also a testimony to the capabilities of an engineer. Future Mechanical and Electrical engineers work in harmony to represent the college at national level robotics competitions. At S.P.A.R.K., we believe that a good idea becomes a great one only when you try it out.



*Never underestimate the determination of a kid who is time rich and cash poor*

# Stepping Stones

**2018: Robocon India**

The S.P.C.E. ROBOCON team, comprising of Second and Third Year students from mechanical and electrical department participated in Robocon India. A national level competition, it is organised by the Maharashtra Institute of Technology, Pune. They secured 13th position, a massive improvement over the last year's rankings of 57 amongst 107 teams. Flux and Torque, the team's Manual and Automatic Robot respectively were rugged and aesthetic machines whose task comprised of transferring and throwing shuttlecocks (cotton balls) through three different hoops of varying heights.

Using complex pneumatic systems and the application of Raspberry Pi for programming was something that the team implemented successfully for the first time. Failed trials on bot prototypes could not diminish the team's enthusiasm to significantly improve their performance over the previous year. Making use of software like CATIA, MATLAB, ANSYS and FLUID SIM extensively helped the team to create an industry-type professional manufacturing environment. Robocon India 2018 was a challenge that further fueled the spark within team members to try harder and achieve greater success.





*All our dreams can come true if we have the courage to pursue them*

SPCEROBOTCON

**2018: Robocon India**



**The Pit Crew**



**The Team Captain**

## HIGHLIGHTS



**In Action**



**The Competition**



# The Operator

*I have not failed. I've just found 10,000 ways that won't work*

# Stepping Stones

## 2017: VJTI Robotics Challenge

It was upon the first and the second year students of electrical and mechanical branches of S.P.A.R.K. to be dauntless and uphold S.P.C.E.'s reputation, continuing the winning streak at the VJTI's Robotics Challenge held on 26th, 27th and 28th December, 2017. The two teams from S.P.A.R.K.; Team Robo-Rangers and Team Excelerators secured the 1st and 2nd positions respectively, and a team from First Year (Mechanical- Team S.P.C.E. 1) secured the 3rd rank. For the first time, S.P.C.E. bagged all the three prizes.

The preparation to excel began from the second week of December. Members of Team S.P.A.R.K. trained and advised the first year students to design and fabricate task-completing Robots.

The theme for this year honoured the renowned Dabbawallas of Mumbai. The teams were expected to present a manual bot-Sakharam and an autobot-Tukaram. The challenge was to complete the given set of tasks within 5 minutes. Arduous and timed practice sessions ensured that the controllers would not be surprised on the game day. There were around 90 teams from various colleges across Maharashtra competing in the event. The finale saw S.P.C.E. competing against S.P.A.R.K.; a win-win situation for S.P.A.R.K.

With their diligent efforts, coordinated practice and extreme enthusiasm, the S.P.A.R.K. team added another laurel to S.P.C.E.'s wreath and left the crowd enthralled in their wake.





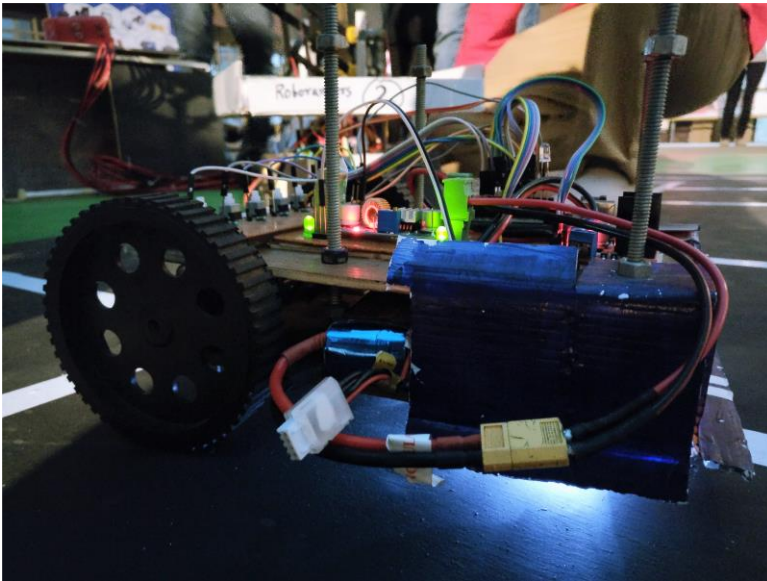
*Whatever the mind of man can conceive and believe, it can achieve*

# Stepping Stones

## 2017: International Robotics Challenge

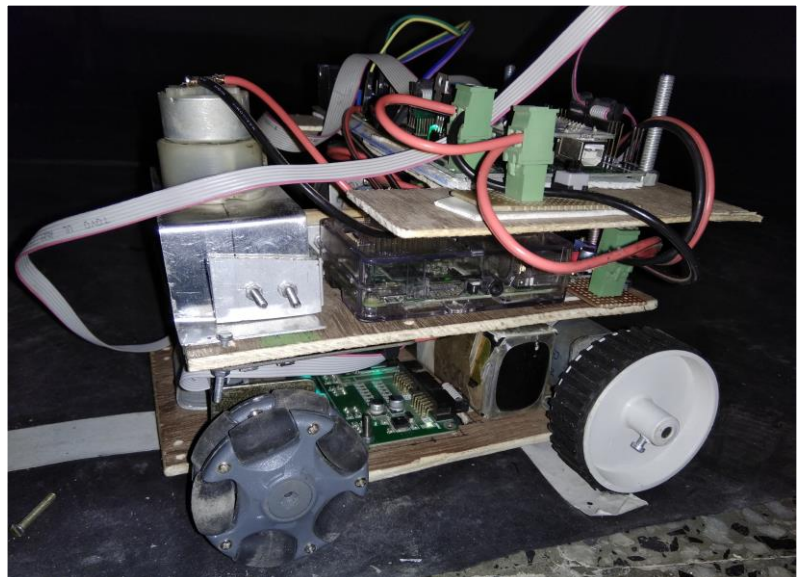
IRC, International Robotics Challenge, is an international level competition organised by Indian Institute of Technology Bombay every year exploring new technologies in the field of robotics.

Under S.P.A.R.K., team ROBOSAPIENS, represented SPCE for the first time in this competition. The team comprised essentially of third year students and their performance was appreciable. ROBOSAPIENS introduced image processing for the first time in SPCE and the experience would help the team to perform better in the successive editions of the competition.



**VRC  
BOT**

**IRC  
BOT**



*If you focus on what you left behind, you will never be able to see what lies ahead*

# Something New

New Techniques & Innovation

## Laser Cutting

This Year we used Medium density Fiber and Laser Cutting extensively for increased weight reduction and thus efficiency.

## Welding Fixtures

To increase welding efficiency and to reduce on the cost incurred due to making of metal fixtures, we decided to use MDF fixtures.

## Pneumatics

The theme demanded an extensive use of Pneumatic systems and team SPCE Robocon successfully implemented a network of pneumatic pipes to complete their task.





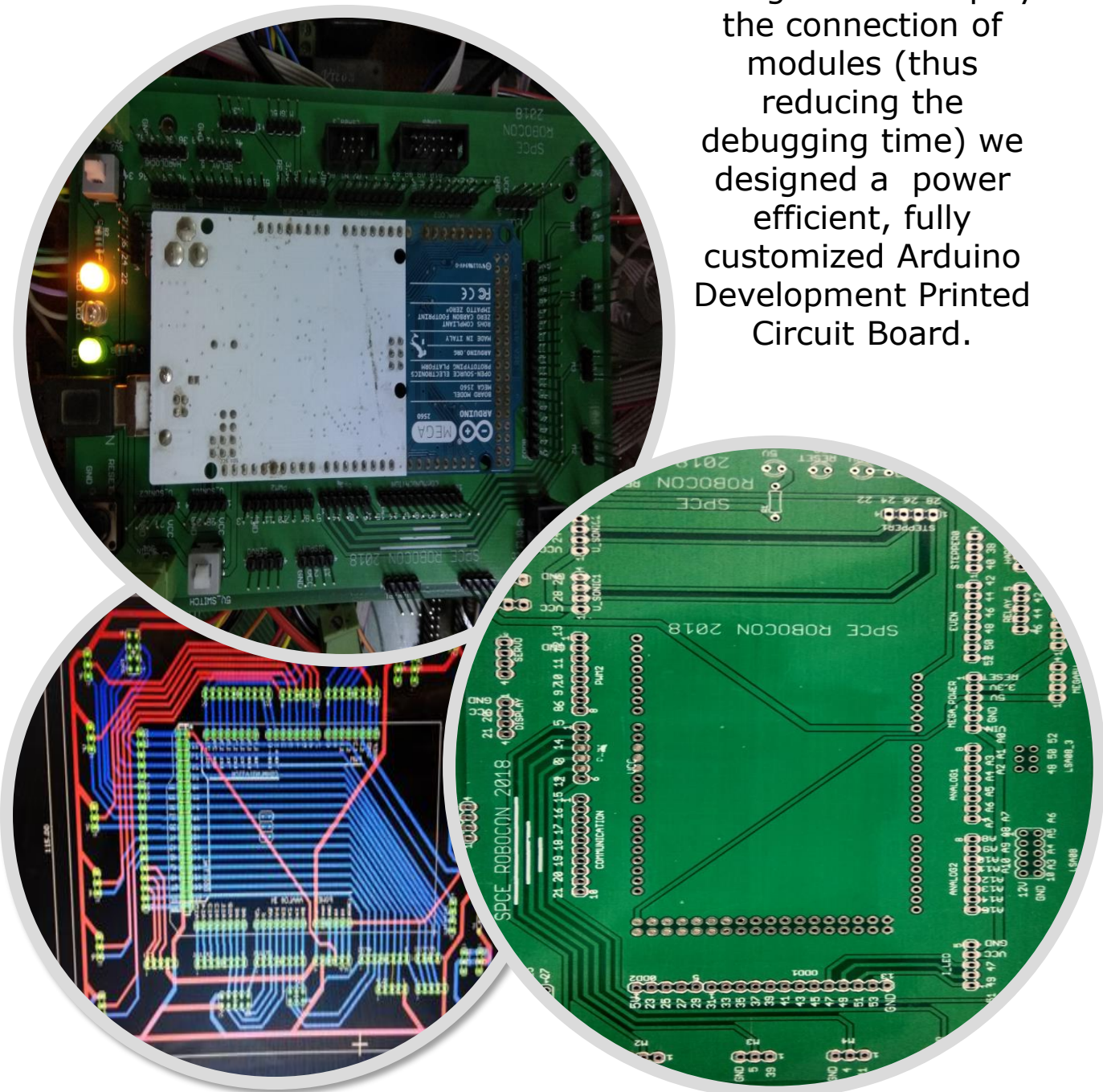
Don't just fly, soar

# Something New

New Techniques & Innovation

## Arduino Development

To make the bot more user friendly, to reduce the complexity of wiring and to simplify the connection of modules (thus reducing the debugging time) we designed a power efficient, fully customized Arduino Development Printed Circuit Board.



Today is a good day to try

# A Word of Gratitude

SPCEROBOTCON To our Sponsors

