

ALVA'S INSTITUTE OF ENGINEERING AND TECHNOLOGY

Shobhavan Campus, Mijar, Moodbidri - 574225

(Affiliated to Visvesvaraya Technological University, Belagavi)

Approved by AICTE, New Delhi & Recognized by Government of Karnataka)



Activity Report on “e-Yantra LAB”

**Academic Year
2017 – 2018**



Alva's Institute of Engineering & Technology

Shobhavana Campus, Mijar, Moodbidri, D.K – 574225

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SL No	Contents	Page No
1.	Circulars & Poster	1
2.	e-Yantra Robotic Competition Qualified Batch 2017-18	6
3.	Details of e-yantra Project Feeder Weeder	4-5
4.	Participating in a eYRC 2017-18 finals at IIT Bombay	7
5.	e-Yantra Certificate by IIT Bombay for getting second place in the in the project assigned	8
6.	News Paper articles about honoring	9

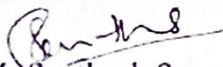



04/08/2017


Circular

It is here by informed to all the final year students that, **E Yantra forum of IIT Bombay is going to conduct a robotics Competition for undergraduate students.** Interested students can register through online with the batch of 4 members. The site address is <http://portal.e-yantra.org>. After the registration team members can take an on-line Selection tests to qualify for participating in the competition. The poster is displayed in the notice board for further queries please feel contact In charge of e-yantra Lab **Mr. Santhosh S Assistant Professor ECE Department.**

The winners of this competition are eligible for a summer internship at IITB through the e-Yantra Summer Internship Program (eYSIP). Please visit <http://portal.e-yantra.org> to find more about the registration, eligibility and our terms and conditions.


Mr. Santhosh S
E-Yantra Coordinator


Prof. Raghavendra Rao A.
Head of the Department


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eYantra
Engineering a Better Tomorrow



e-Yantra Robotics Competition - 2017

- Provides a platform for students to demonstrate their knowledge and programming skills in Embedded Systems and Robotics.
- Learn by doing! An opportunity for you to apply your knowledge to solve a real life problem with given hardware.

How to participate:

- Register as team of four.
- Selection through online test.
- Selected teams are provided with further training/problem.
- Teams learn and implement solutions in a step-by-step manner through various Tasks.
- Based on performance in the Tasks, teams are chosen as finalists.
- Finalists compete for prizes at Finals at IIT Bombay in March 2018.
- Prizes include internships at e-Yantra lab, IIT Bombay.

Registration opens: 1st August, 2017 onwards!

Register at: www.portal.e-yantra.org
Contact us at: helpdesk@e-yantra.org
Phone: +91 22 2576 4986



www.facebook.com/eYantra

Registration open
till
31st August, 2017



santhosh.s Nayak <santhosh.s.nayak@gmail.com>

Bombay, e-Yantra: e-Yantra Robotics Competition (eYRC-2017) : Registration Started

Tue, Aug 1, 2017 at 8 29 PM

santhosh.s Nayak <santhosh.s.nayak@gmail.com>
IITB <admin@e-yantra.org>



Dear Sir/Madam,

Greetings from e-Yantra!!!

We are happy to announce the launch of the e-Yantra Robotics Competition (eYRC-2017).

e-Yantra is a project sponsored by MHRD through the National Mission on Education through ICT (NMEICT) to spread effective Embedded systems and Robotics education at Engineering/ Science/ Polytechnic colleges across the country.

About Competition:

e-Yantra Robotics Competition (eYRC) is a unique annual competition for undergraduate students in Engineering/ Science/ Polytechnic colleges. The competition has evolved over the years to include more numbers of teams by introducing different Tracks in the competition. Currently, in its sixth edition, eYRC-2017 introduces three Tracks – all Tracks are conducted in parallel and Finals for all Tracks are planned to be held at IIT Bombay in March 2018. Each Track may contain one or more Themes – problem statements abstracted into a game rulebook. Details will be disclosed after the selection test.

Registration involves:

Students participate as a team of four– with each team member taking the test simultaneously. A team's selection test score is used to determine the eligibility of the team to participate in the competition. A Team's selection test score along with other factors such as participation of team member/s in the past competitions may be used to assign Tracks and Themes to the team. e-Yantra holds complete discretion in the selection and Track/Theme assignment processes.

The winners of this competition are eligible for a summer internship at IITB through the e-Yantra Summer Internship Program (eYSIP).

Please visit <http://portal.e-yantra.org> to find more about the registration, eligibility and our terms and conditions.

We request you to motivate your college students to register for the competition. Please download eYRC-2017 Poster to be displayed on the notice board of all departments at your college.

Please circulate this e-mail to other departments of your college.

With best regards,
e-Yantra Team



e-Yantra is a project sponsored by MHRD through the National Mission on Education through ICT (NMEICT)

eYRC-2017.pdf
3353K

santhosh.s Nayak <santhosh.s.nayak@gmail.com>
gurudatt.hebri@gmail.com

Sat, Mar 24, 2018 at 7:57 PM

Dear sir
This is the invitation which we got in August 2017 and it started in August 2017 and finals held in March 21 to 24th 2018 @ IIT Bombay
please find attachment
(quoted text hidden)



e-YRC 2017 Competition

In the e-Yantra robotics Competition 2017 all the final year Project batches of ECE department Participated and only one batch got selected in the prelims. The selected batch then cleared second and third task assigned under the theme called “**Feeder Weeder robot**”. In the finals they bagged second prize in the sixth edition of National-level e-Yantra Robotics Competition (eYRC-2017) held at IIT Bombay from March 22 to 24.

In this project Feeder-Weeder, considered a scenario where all of the work done on farms is automated by a group of autonomous robots working together in sync with each other. In this Project, we have used concepts such as microcontroller programming, communication, path planning, sensor interfacing. In this project by considering an agricultural field with many crops growing in it. Some of these crops need to be fed N-fertilizer and others need to be fed P-fertilizer. In addition to this, there are some Weeds growing in the field which need to uprooted and disposed outside the field. In order to complete these tasks two Fertilizer Robots and a Weeding Robot are deployed in the field. Each of the fertilizing robots carries one particular type of fertilizer. The task of the Fertilizer robots is to traverse the field and identify crops which are required to be fertilized and fertilize the crops which require the same fertilizer as the one it is carrying. The task of the Weeding robot is to identify and remove weeds from the field. To make this system work more efficiently, the robots communicate between each other to share information and coordinate with each other.

The Firebird V robot is used for weeding and two Spark V robots to feed two fertilizers to two different plants. The model of a agricultural field is built on a flex of 8*8 feet size .The track has 6*6 blocks, borders for which are black lines and the nodes have a thick black portion.



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Each Robot have inbuilt white line sensors which keep the robot on track while it traverse the arena. The plants and weeds are kept at the center of the block. To differentiate, weeds and plant are designed with different colors. Weeds are green and two plants are blue and red. The robots identify the plants with the color sensor that is interfaced in them. The robots use sharp sensors to avoid collision between them. They communicate with each other using RF Zigbee module.

The algorithm is designed in such a way that all the robots begin their operation at the same time. Robots scan the arena for plants and weeds and when they identify it, they first indicate the color of the plant by glowing RGB LED of the detected color and then they perform their task that they are designed for. When feeder robots identify their respective plants, they drop the feed to the root cavity through the feeding pipe. And when the weeding robot identifies weeds, it uses the robotic arm built on it to pluck the plant and deposits it in the weed collector box. When all the operation is done the feeder robots go to their home position which is given in the track and the weeder goes to the deposition zone and drops the weed collector box and then goes to its home location.

The concept used in this project is adopted from Swarm robotics. Swarm robotics is an approach to the coordination of [multi-robot systems](#) which consist of large numbers of mostly simple physical [robots](#). It is supposed that a desired [collective behavior](#) emerges from the interactions between the robots and interactions of robots with the environment. Swarm robotics is an emerging approach to coordinate a large number of robots. These robots, which are usually simple and low-cost, may perform a wide variety of missions, serving either civilian or military applications. Since autonomy, modularity, collaboration and interactivity are characteristics of swarm robotics systems, the multi-agent paradigm became a natural choice to address their issues. Because of its inherent complexity and reuse possibilities, there are many advantages in using system-of-systems architectures for designing swarm robotics systems.



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#	Name	USN	Title	Guide
1	Arun Kumar	4AL14EC011	Feeder Weeder Robot	Mr. Santhosh S.
2	Chethak	4AL14EC023		
3	Deepika	4AL14EC027		
4	Rohan Sonal Dsouza	4AL13EC067		

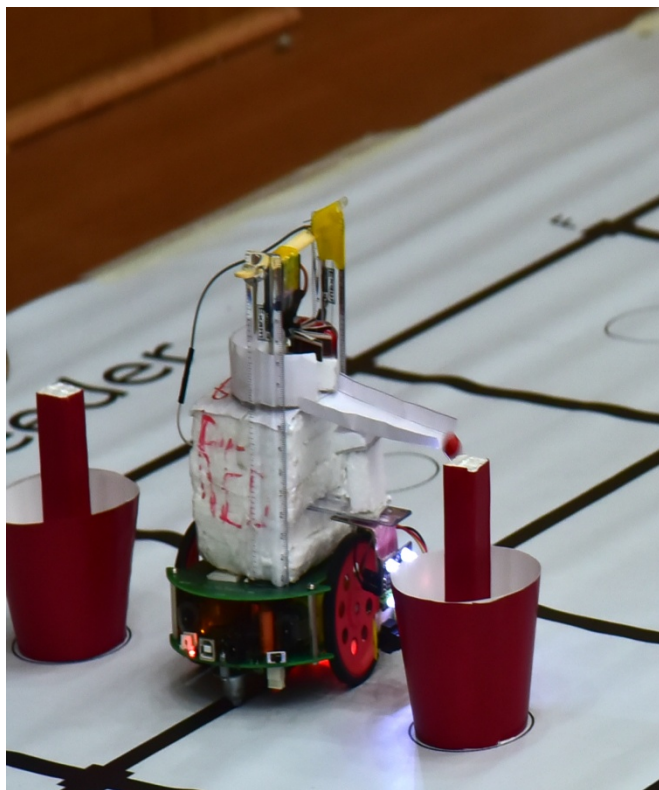


Fig : Red feeder Robot feeding to the red plant.

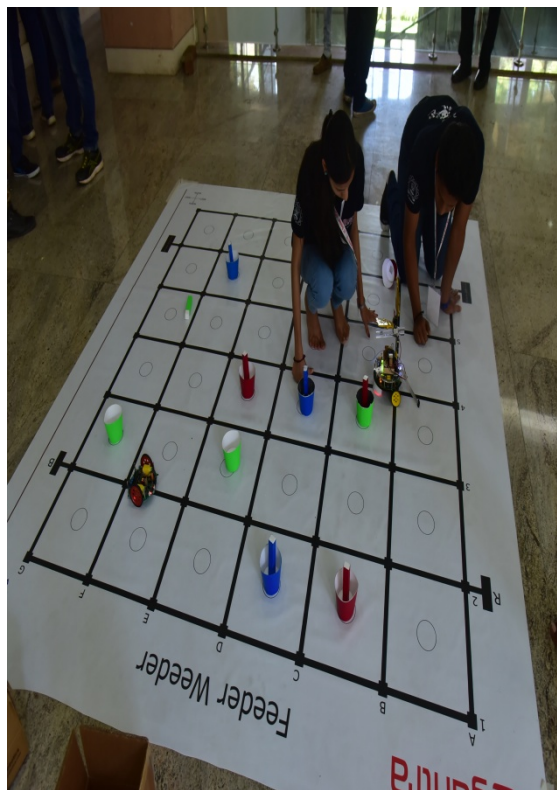


Fig : Weeder Robot Removing weeds.



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Fig: Feeder Weeder Robot Arena



Fig: Fig: e-YRC 2017 Team



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Fig: Certificate of Merit Received



Fig: Vishavani News Paper clip

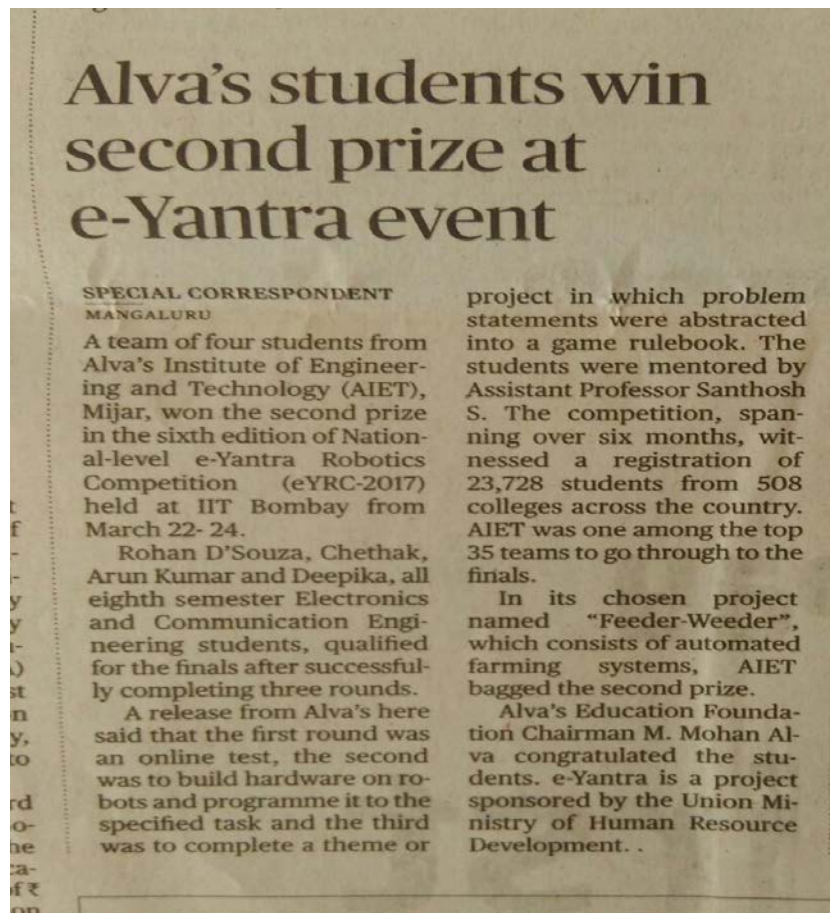


Fig: Deccan Herald Paper clip



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Students from Alva's Institute of Engineering and Technology, Mijar, won the second prize in the sixth edition of National-level e-Yantra Robotics Competition (eYRC-2017) held at IIT Bombay recently. DH PHOTO

Alva's engineering students win prize in eYRC-2017

MANGALURU, DHNS: A team of four students from Alva's Institute of Engineering and Technology (AIET), Mijar, won the second prize in the sixth edition of National-level e-Yantra Robotics Competition (eYRC-2017) held at IIT Bombay from March 22 to 24.

The students, Rohan D'Souza, Chethak, Arun Kumar and Deepika from the eighth semester Electronics and Communication Engineering, qualified for the finals after successfully completing three rounds.

The competition, spanning over six months, attracted a registration of 23,728 students from 508 colleges across the coun-

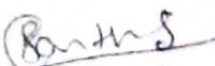
try. AIET was one among the top 35 teams to go through to the finals. In its chosen project named 'Feeder-Weeder' that comprised automated farming systems, AIET bagged the second prize.

e-Yantra is a project sponsored by MHRD through the National Mission on Education through ICT (NMEICT) to spread effective Embedded Systems and Robotics education at Engineering/Science/Polytechnic colleges across the country. eYRC is a unique annual competition for undergraduate students of such colleges.

The students were mentored by Assistant Professor Santhosh S.

BPCL wins Bridge tourney

Deccan Herald Paper clip


Mr. Santhosh S
E-Yantra Coordinator


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