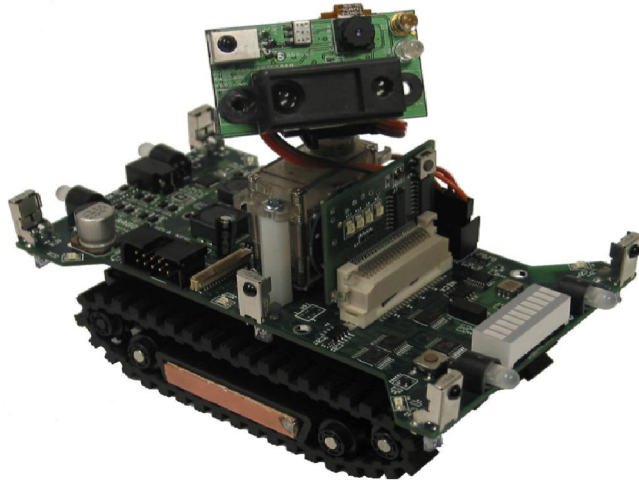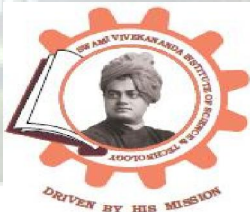# Workshop on Robotics

May 2nd & 3rd, 2016

Jointly organized by

**Department of
Electronics & Comminication Engg.
Swami Vivekananda Institute of
Science and Technology
And
Skill Rex Technology,Mumbai**

Venue

Swami Vivekananda Institute of Science & Technology
Dakshin Gobindapur, P.S.- Sonarpur, Kolkata- 700145, West
Bengal, India.
Website: www.svist.org

Objective of the Workshop

Robotics brings together several very different engineering areas and skills. Robotics is the branch of mechanical engineering, electronic engineering and computer science that deals with the design, construction, operation, and application of robots, as well as their control, sensory feedback, and the information processing. These technologies deal with automated machines that can take the place of humans in dangerous environments or manufacturing processes, or resemble humans in appearance, behavior, and cognition. Though a significant percentage of robots in commission today are either human controlled, or operate in a static environment. Also there is an increasing interest in robots that can operate autonomously in a dynamic environment. These robots require some combination of navigation hardware and software in order to traverse their environment. Robotics engineers design robots, maintain them, develop new applications for them, and conduct research to expand the potential of robotics. Robotic sensing is a branch of robotics science intended to give robots sensing capabilities, so that robots are more human-like.

When you want to design a better robot you should get some basic knowledge in these fields. Firstly the, Mechanics which helps about keeping a robot in balance. For eg. how forces are transferred between the different parts of a construction, where the center of gravity lies, friction, position, speed, acceleration, Newton's laws, inertia, material properties. Secondly, the Electronics for the electronic components functioning, specifications and applications of those components in assembling especially microcontrollers. And the most important part is the programming for the hardware control for generation of task-specific motions for which the requirement is building up of good algorithm. Robotic sensing algorithms that require environmental feedback and decision making. Artificial Intelligence is the art of making the right decision given the constraints of the current system, as finding the shortest way between points, dealing with obstacles,

These two day workshop aims at providing an excellent platform for the budding hardware and software engineers of different academic Institution and research scholars pursuing research in the broad domain of robotics. All the technical sessions of the program will be highly informative and enlightening with the presence of eminent experts from Industry delivering talks encompassing fundamental concepts to recent applications. The audience will enjoy real-world state-of-the-art scenario when experts from industries would share their experience and technical expertise.

About S V I S T

Swami Vivekananda Institute of Science and Technology (*SVIST*), a non-profit-making trust established in the 2008 with the aim of Swamiji's vision of spreading education throughout the society. The clear objective of the institute is to provide high quality technical education to cope with the recent industry requirements. It provides state-of-the-art infrastructure and required academic ambience for developing the professional and managerial skills to students along with the good moral and ethical values which will make them competent engineers in the fastest growing world.

Department of ECE

With excellent infrastructure, highly qualified and eminent faculty members, we are considered as one of the best departments amongst the colleges affiliated to WBUT. It maintains a cordial relationship with the industry. In addition to the academic expertise, our faculty members also contribute their intelligence in the research and development work at par with the industry so that they are uodated in technology and groom their students to the technical excellence.

Mentors

Skill Rex Technology,Mumbai

Topics

- Fundamentals of AVR series of microcontroller
- Programming the microcontroller using embedded C
- Interfacing and controlling various devices like keypad, LED, buzzer, motors, sensors, etc, with Microcontroller.
- Basics of I2C protocol.

- Hardwire interfacing circuitry of a 3 axis acceleration sensor
- Recognitizing hand gesture using acceleration sensor and controlling Robot.

Organizing Committee

Chief Patron
Dr. Nandan Gupta,
Director, SVIST

Patron
Dr. Sonali Sarkar, Principal, SVIST
Prof. P.K.Saha
Professor, SVIST,Ex- Professor, C.U.

Program Chair
Mr. Chittajit Sarkar,
Head of the Department, ECE Dept. SVIST

Joint Convenors
Mr. Sheershendu Bhattacharya
Asst.Prof .(ECE Dept.), SVIST
Mr. Arindam Halder,
Asst.Prof .(ECE Dept.), SVIST

Joint Secretaries
Mr. Anindya Ghosh
Asst.Prof .(ECE Dept.), SVIST
Mr. Kausik Sarkar
Asst.Prof .(ECE Dept.), SVIST

Assistant Secretaries
Ms Divya Rao
Asst.Prof .(ECE Dept.), SVIST
Mr. Anindya Sundar Das
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Ms Yuthika Jana
Ms Mousumi Dhara
Mr.Soumyajit Das
Ms Mukta Mitra
Mr.Nabojit Dutta
Mr.Sayantan Talukder

Important Dates
Last date for receiving filled in application: 27th April , 2016.

Contacts
Mr. Chittajit Sarkar -8420305890

Eligibility for Participation
Any student/faculty member /technical support staff/Lab instructor of AICTE approved engineering colleges / Polytechnics or UGC recognized general degree college can participate in the workshop.

Registration fee
The registration fee, which includes course material , Kit for each group, lunch, tea on workshop days, is Rs.700/- per internal student participant, & Rs.800/- for other members.

Transport and Communication
SVIST is situated at Gobindapur at distance of 8 K.m. from Garia & 3 k.m. before Baruipur adjacent to the bye -pass road.

By Bus: Those who want to avail bus, can do so with Barasat-Baruipur or CTC- Baruipur bus from Garia or Kamalgazi and will have to get down at Gobindapur stoppage.

By Train: Nearest railway station is Baruipur. Avail a local train (except Budge Budge, Canning, Sonarpur Local) starting from Sealdha (South) and get down at Baruipur. Then take auto-rickshaws for Gobindapur.

By Metro: The nearest metro station is Kavi Nazrul (Garia Bazar). Then take auto-rickshaw for Gobindapur. SVIST is at 5 minutes of walking distance from Gobindapur towards the bye-pass. Rickshaws are also available from Gobindapur to the college.

Program Schedule

2th May, 2016

9.30-9.45 : Registration
9.45-10.00 : Inauguration
10.00-10.15 : Tea Break
10.15-12.45: Intro to Robotics & KIT distribution
12.45-13.30: Lunch
13.30-16.15: Technical session
16.15-16.45: Doubt solving session

3rd May , 2016

9.30-12.45: Technical session
12.45-13.30: Lunch
13.30-14.45: Technical session
14.45-15:15 Valedictory Session