



# INNOVATION AUTOMATION TECHNOLOGY ROBOTICS STEAM



#WorkOfFuture

An Integrated offering of Engineering,  
Design Thinking, Robotics, Artificial  
Intelligence, Machine Learning,  
Augmented Reality, Virtual Reality,  
Schematics & Programming

**INNOVATION & LEARNING** Never Stops



# STEAM LEARNING

## Leveraging Technology

OMOTEC – On My Own Technology fuels curious minds for innovation and research in the adaptation and creation of technology and its application.

OMOTEC has researched and built a robust understanding of INTEGRATED knowledge on NEW AGE SUBJECTS of technology related to Engineering, Design Thinking, Machine Learning, Artificial Intelligence, Electronics, Mechanics, Programming, Applied Sciences, 3D printing, Aeromodelling, Augmented Reality, Virtual Reality and many more.

In this age of technology revolution where we see rampant growth in automation and innovation, OMOTEC is the catalyst for the youth to explore endless possibilities.

Our curriculum believes in EXPLORING & MAKING, thus creating more curiosity towards subjects of Science, Technology, Engineering, Art and Math (STEAM) by connecting them to real world applications.

## TEAM OMOTEC



**Reetu Jain**

Chief Mentor and Founder of On My Own Technology. She is an MBA with 24 years of rich experience in understanding markets & consumers, Product Innovation and Research, of which the last 10 years have been extensively into Robotics & Education. She currently holds 2 Patents and Research Papers in her name.

Shekhar Jain is CEO & Co-founder at On My Own Technology. He is a technology enthusiast, has been in corporate service for the last 24 years with his last stint being Managing Director, JP Morgan Chase India. He was the lead Program Manager for implementing Robotics Solutions for JPM for the Strategic Unit of Reference Data Globally having implemented several Robotic Solutions for the bank and was also responsible for developing various technology stacks for ICICI Bank, IL&FS and NSE during his stint there.



**Shekhar Jain**



5 Flagship Innovation Centres



More than 80 Qualified Engineers (BE, BTech, MTech, Mechantronics)



4000+ electronic, mechanical, electrical tools and components with various softwares



Training 5000 students every month



Partner to 50+ Schools for STEAM program



3D Designing, Printing Labs



BIRAC approved & funded Innovation Project



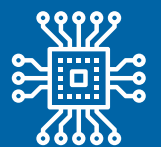
## Explore The World Of Robotics



DRONE MAKING & AEROMODELLING



MECHANICAL BUILDING & DESIGN THINKING - Machines Mechanisms Material - FTC



CORE & ADVANCE ELECTRONICS - Circuits & Schematics, Arduino, Raspberry Pi, Soldering, PCB designing



CODING & PROGRAMMING, AUTONOMOUS ROBOTS - Python, Java, IDE



GAMING, DESIGNING, APP DEVELOPMENT - Scratch, HTML, Android, UNITY 3D



LEGO ROBOTICS & PROGRAMMING - WRO & FLL



MACHINE LEARNING & ARTIFICIAL INTELLIGENCE



AUGMENTED REALITY, VIRTUAL REALITY



RESEARCH & INNOVATION

“INSPIRING the next generation of THINKERS  
 Developing a mindset of Innovation  
 Core Experiential Learning & EXECUTION  
 #WorkOfFuture is Technology & Technology is here!”

## OMOTEC - AREAS OF EXPERTISE

### OMOTEC STEAM INNOVATION LABS FOR SCHOOLS / COLLEGES

Fully equipped Labs with hi-tech tools, cutters, machines, electronic and mechanical components, along with knowledge bank of coaches from all fields of engineering

Complete assistance in setup & maintenance of STEAM Innovation Labs along with curriculum

Train the Trainer Program to enable independent functioning

Support Atal Labs

### OMOTEC STEAM SCHOOL K-12 CURRICULUM

Year Long, grade-wise in-school curriculum for K-12, integrating STEAM learning in Electronics, Mechanics & Coding with Applied Science and Math based foundation

Curriculum mapped to various boards for each grade

Exhaustive Robotics curriculum with hands on project execution in every session offering after school robotic program and specialized event / theme based workshops

Corporate CSR Program for Skilling

### OMOTEC FUTURISTIC SKILLS WORKSHOP

Workshops for Engineering Colleges and Corporates in the fields of Machine Learning, Artificial Intelligence, Automation and Futuristic Technology

Hands on workshop for building, coding, executing ideas & exploring endless possibilities to INNOVATIVE SOLUTIONS

### OMOTEC PRODUCT DEVELOPMENT INNOVATION & RESEARCH

2 Patents for medical devices, filing of Research Papers in International editorials and guidance for multi-technology led Innovation projects

Ideas to Execution – using design thinking Framework

Association with industry professionals to aid RAPID Product Prototyping, Development, Testing and Patent Filing Process

### OMOTEC PRODUCT DEVELOPMENT EXPLORATION KITS

OMOTEC STEAM KIT aids execution of 100 plus projects combining knowledge exploration in mechanical, electronics and coding fields

Open ended KIT enables exploration of Physics and Math concepts to make innovative projects

Age Appropriate KITS with guided manual & backend support to understand and do technical trouble shooting

## OMOTEC FLAGSHIP INNOVATION CENTRES

MUMBAI – LOKHANDWALA | JUHU | PRABHADEVI  
 PUNE – KHARADI

- 2000 squarefeet of Lab space
- 1:1 Personalised Coaching
- Year Long planned curriculum
- Integrated hands-on learning for Mechanical, Electronics and Coding



## CAPABILITIES TO MENTOR AND PARTICIPATE IN VARIOUS COMPETITIONS





# OMOTEC STEAM K-12 SCHOOL CURRICULUM

## Program includes:

- Proprietary Curriculum + OMOTEC trainers + Material for hands-on execution of all curriculum.
- Total no of sessions: 30 for each grade for each academic year.
- Duration of each session: one class period weekly (ideally 1 hr.)
- Year long topic wise schedule is provided by OMOTEC & mutually finalized in the beginning of the year
- Professional Engineer & Science faculty will be deputed to the school.
- Classes will be conducted as per school schedule and timetable.
- Grade wise OMOTEC Certification for every student on STEAM Education at year end
- Robo Month Organised by OMOTEC to test and culminate robotic intelligence gained during the year
- Competition Trainings like The FIRST Tech Challenge (FTC), FIRST LEGO League (FLL), World Robot Olympiad™ (WRO) & many more

PROGRAMS	TOPICS COVERED	GRADES											
		1	2	3	4	5	6	7	8	9	10	11	12
LEGO ROBOTICS WITH MECHANICAL DESIGN, CONSTRUCTION & CODING	1. MOTION & TYPES OF MOTION - (LINEAR, CIRCULAR, OSCILLATORY), SPEED, VELOCITY, ACCELERATION, KINEMATICAL EQUATIONS, NEWTON LAWS OF MOTION, DISPLACEMENT, FORCE & PRESSURE	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
CIRCUITS, SCHEMATICS & ELECTRONICS, ARDUINO, RASPBERRY PI	2. ELECTRICITY - VOLTAGE, BATTERIES, AC / DC, SERIES, PARALLEL, OHMS LAW 3. HEAT - CONDUCTION, CONVECTION, INSULATORS, RADIATION, JULES LAW OF HEAT 4. MAGNETISM - FORCE (PULL / REPEL)	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
3D PRINTING - FROM DESIGN TO PROTOTYPING, USING 3D PRINTER & DOODLING PEN	WHAT IS 3D PRINTING, 'BASICS OF 3D PRINTING, KNOW YOUR 3D PRINTING & LIVE 3D PRINTING DEMO, APPLICATION OF 3D PRINTING IN REAL WORLD, DOODLING, CREATE YOUR 3D DESIGN ON AUTODESK		Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
CODING, APP DEVELOPMENT & PROGRAMMING LANGUAGES	PROGRAMMING LANGUAGES LIKE SCRATCH, HTML, JAVA, MIT APP INVENTOR, UNITY 3D					Y	Y	Y	Y	Y	Y	Y	Y
SCIENCE & ENGINEERING PROJECT, IDEAS TO EXECUTION	APPLICATION BASED PROJECTS EXECUTED USING SOME OF THE ABOVE CONCEPTS				Y	Y	Y	Y	Y	Y	Y	Y	Y
PYTHON PROGRAMMING	FUNCTIONALITY & APPLICATION BASED CODING							Y	Y	Y	Y	Y	Y

OPTIONAL PROGRAMS													
AERO MODELLING, DRONE MAKING - DESIGNING, BUILDING, FLYING MINIATURISED AIRCRAFTS	UNDERSTANDING THE PHYSICS OF FLYING, CREATING YOUR FIRST GLIDER, FLYING SIMULATION, CREATING & FLYING YOUR CHUCK GLIDER												
NATIONAL & INTERNATIONAL RESEARCH & INNOVATION PROJECT COMPETITIONS	SCIENCE, RESEARCH, PROGRAMMING BASED COMPETITIONS								Y	Y	Y	Y	Y
NATIONAL & INTERNATIONAL ROBOTICS COMPETITION(FLL, WRO, IIT TECH FEST)	ROBOTICS - DESIGN, CONSTRUCTION, PROGRAMMING & RESEARCH BASED COMPETITIONS					Y	Y	Y	Y	Y	Y	Y	Y
AR/VR	REAL & DETAILED INCLUSIVE & EXHAUSTIVE LEARNING THROUGH CLOSE VISION	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
MACHINE LEARNING / ARTIFICIAL INTELLIGENCE / IMAGE PROCESSING	APPLICATION OF MACHINE LEARNING THROUGH DATA COLLECTION, READING AND IMPLEMENTING IN VARIOUS FIELDS								Y	Y	Y	Y	Y

# OMOTEC FUTURISTIC WORKSHOPS @ ENGINEERING COLLEGES

Changing Mindsets gearing them to problem solve with high-tech, advanced & futuristic technology solution

Enabling Design Thinking, Innovation & Research to create real world solutions



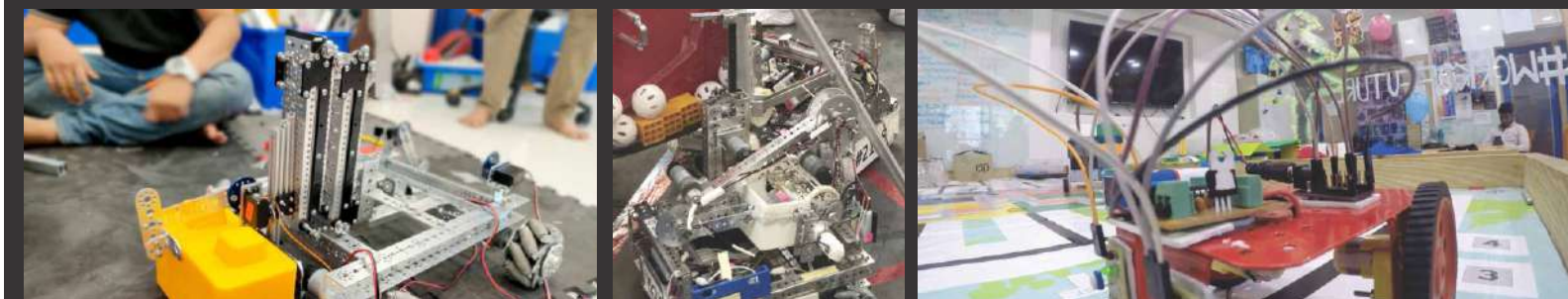
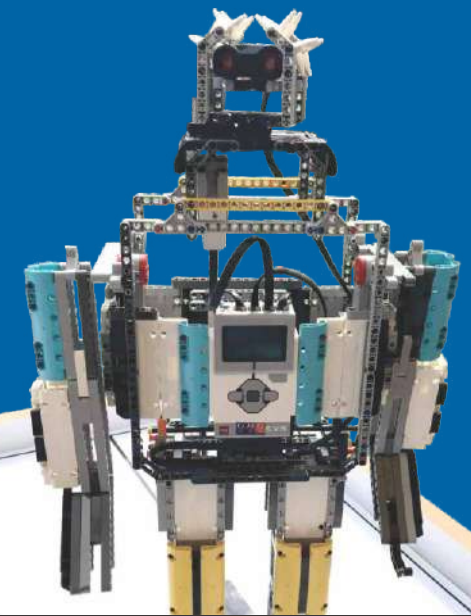
Embedded Electronics  
Arduino Environment



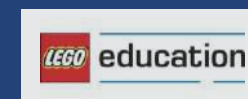
Project  
Guidance



Machine Learning  
+ Artificial intelligence



## AFFILIATIONS





# AWARDS

## International Awards

# AWARDS

## National Awards

2017

- Future Innovators Award WRO - Costa Rica 2017

2018

- Best Innovative Project Idea WRO - Thailand 2018
- Best Research Award FLL - Estonia 2018
- Best Innovative Solution Award FLL - Estonia 2018

2019

- ROBO SOCCER - Team G Force: Only Indian team to represent India in World Hungary WRO 2019



- Innovation project presented at ISEF 2019 - Arizona, US

- Best Innovation and Strategy Award FLL - Lebanon 2019
- Represented India: FLL - Turkey 2019
- Team Golem Army - WRO World Champions 2019 Hungary for Road Potholes
- Techo Nerds - 1st Prize at NASA's Antimicrobial Space Challenge 2019 in Space Medical Device Challenge
- Team G Force - 2nd Prize at NASA's Antimicrobial Space Challenge 2019 in Space Tool Challenge
- Team LIVE WIRES - Best cultural team award @ MakeX 2019, China

2016

- Myopia - Shortlisted in Top 100 National IRIS Science Fair 2016

2017

- Best Robo Performance & Design Awards FLL 2017
- Top 20 – Cosmo Clench IIT Tech Fest

2018

- Team MAD Engineers - Finalist Alliance 1st Team at FTC Nationals 2018
- Best Project Run Award - Team BLOCKSMITHS - WRO - 2018
- IRIS Nationals shortlist - Facial Analysis Based Interactive Chat Bot using Neural Networks



- Shortlisted in Top 100 National IRIS Science Fair 2018

2019

- Best Design Award - FTC 2019
- Best Motivate (Inspiration to others) Award - FTC 2019
- Judges Compassion Award - FTC 2019
- Nominated Best Inspire Award – FTC 2019
- Best Project Award - FLL 2019
- 1st prize in Robo Soccer at WRO Nationals 2019
- 1st prize in Open Junior Category at WRO Nationals 2019
- 1st prize in Open Senior Category at WRO Nationals 2019
- 2nd prize in WEDO ROBO MAZE at WRO Nationals 2019
- 3rd Prize in SENIOR ROBO RACE at WRO Nationals 2019
- 3rd Prize in Junior Robo Race at WRO Nationals 2019
- Team LIVE WIRES bagged silver at MakeX Makebot Challenge Mumbai 2019
- Second price in the Fastest Line Following Bot @ Technoxian Nationals 2019 and many more.....





# OMOTEC INNOVATION & RESEARCH

As learning gets more practical, hands-on application and research oriented, students develop temperament and attitude to Problem Solving, Analytical Reasoning, Communication and Teamwork skills

This has resulted in INNOVATION PROJECTS.



This invention is filed for patent and relates to a gait analysis and more particularly, to a wearable, portable, affordable and accessible device for gait analysis.

## OUR INNOVATION PROJECTS

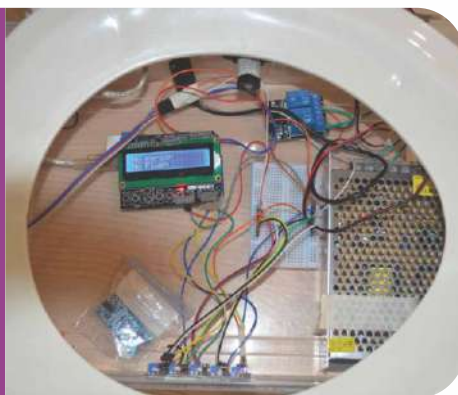


**Underground  
Water pipe  
Leakage  
detection**

Water leakage detection for underground pipes using a wireless robot with night vision camera and transmitter receiver to communicate with encoder/decoder motors.

Flexi Flush to slow the flow of water flushed for urine by detecting the diameter of the waste - liquid or solid.

**Flexi Flush  
Water waste  
management**



**Trail On  
Fuel efficiency  
solution**

Trail-On is tool to save fuel by rotating the axle of the second car with the help of differential of the first car converting a four wheel drive to a six wheel drive.

Advance Pot-Hole Detection system that uses Image Processing, Open CV, Machine Learning to detect potholes by a running vehicle, determines the size and geo tags the location on Google map to help BMC in smart governance

**Advance Pot-Hole  
Detection for  
better city  
transportation  
PROPOSED TO  
BMC**

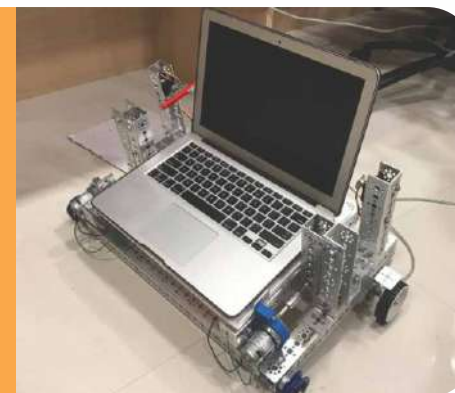


**EverGreen  
Eco-Friendly  
Banana Leaf  
Packaging  
Unit**

EverGreen is a banana leaf Packaging machine that cuts, sterilises with UV rays, boils for increasing turgidity of the leaf, dries, packs and folds dry food. This is developed to reduce usage of cheap toxic disposable plastic for restaurant food.

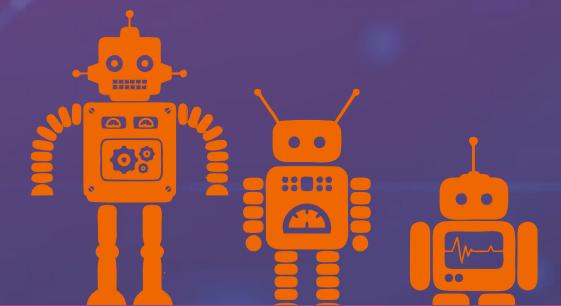
WorkBit is an interactive, automated & customised laptop stand that adjusts its height, distance and flap to ergonomically adjust to the individual posture. It reminds of the blinks, posture and movement to the individuals suited for their work and body culture.

**WorkBit  
Smart interactive  
laptop stand**





INNOVATION & LEARNING  
**NEVER STOPS**



#WorkOfFuture

For free demos & inquiries: **022-489-70926** For support & customer care: **022-489-72066**

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MUMBAI - Lokhandwala | Juhu | Prabhadevi | PUNE - Kharadi

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