ROBOTICS CLUB

SCIENCE AND TECHNOLOGY COUNCIL
IIT KANPUR

Robotics Club IITKanpur

- Mechanical Designing
  Simulation and Motion Planning
  Sensors
  PID & Controls
  Microcontrollers

- Machine Learning
- Robot Operating System (ROS)
- Computer Vision
- Algorithms in Robotics
- Localization and Mapping

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A GLIMPSE OF OUR PROJECTS

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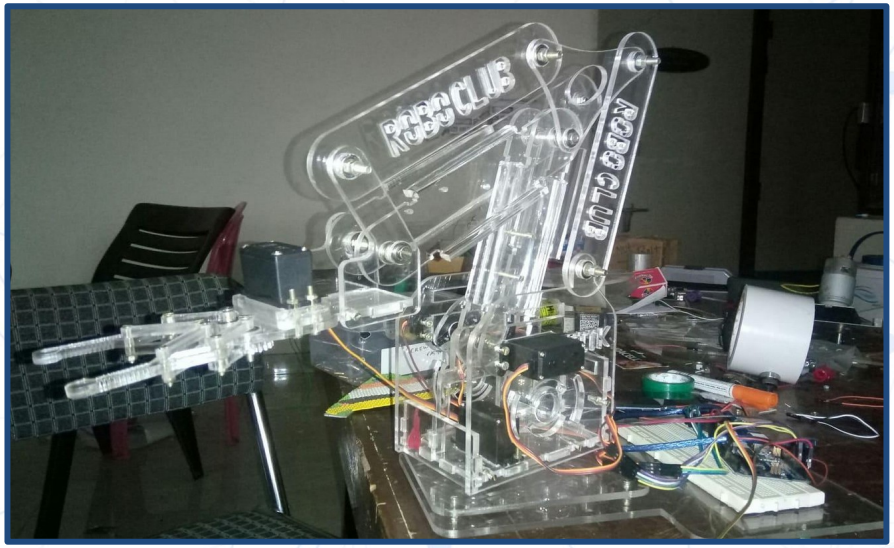
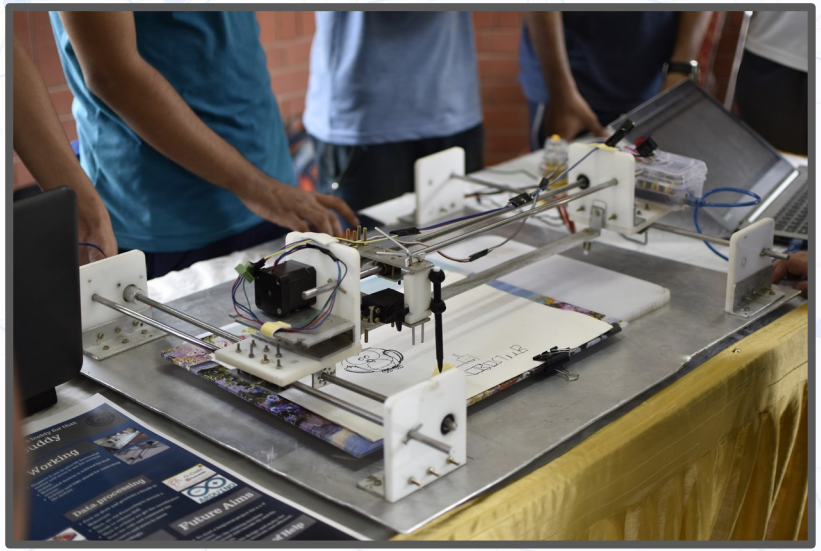


Brain Interfacing Robotic Arm (BIRA)
(**Best Club Project Award** Winner)



Sketching Buddy
(**Best Implemented Project Award** Winner)

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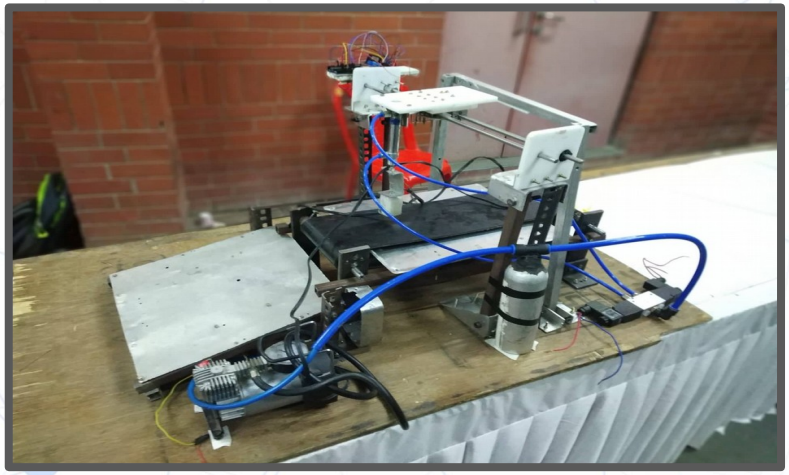

Saffron Stigma Separator
TCTD Challenge
(**Silver Medal**, 7th Inter IIT Tech Meet)

Haptics Wristband
(**Best Innovative Project Award** Winner)

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Robotics Club Winter Camp 2019

Unlock The Roboticist Within!

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5 Intensive Workshops

30th Nov - 18th Dec 2019

1. Programming
2. Microcontrollers
3. Computer-aided Designing
4. Computer Vision
5. Robot Operating System (ROS)

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Programming

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Not done ESC101?

We'll introduce you to programming in C/C++

- Conditionals, Loops, Arrays
- Functions
- Implementation of Stacks and Queues
- Applications in Robotics

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Completed ESC101?

We'll introduce you to applications of algorithms in robotics:

- Implementing a Maze-Solving Algorithm using Breadth First Search
- Implementing the Flood-fill Algorithm

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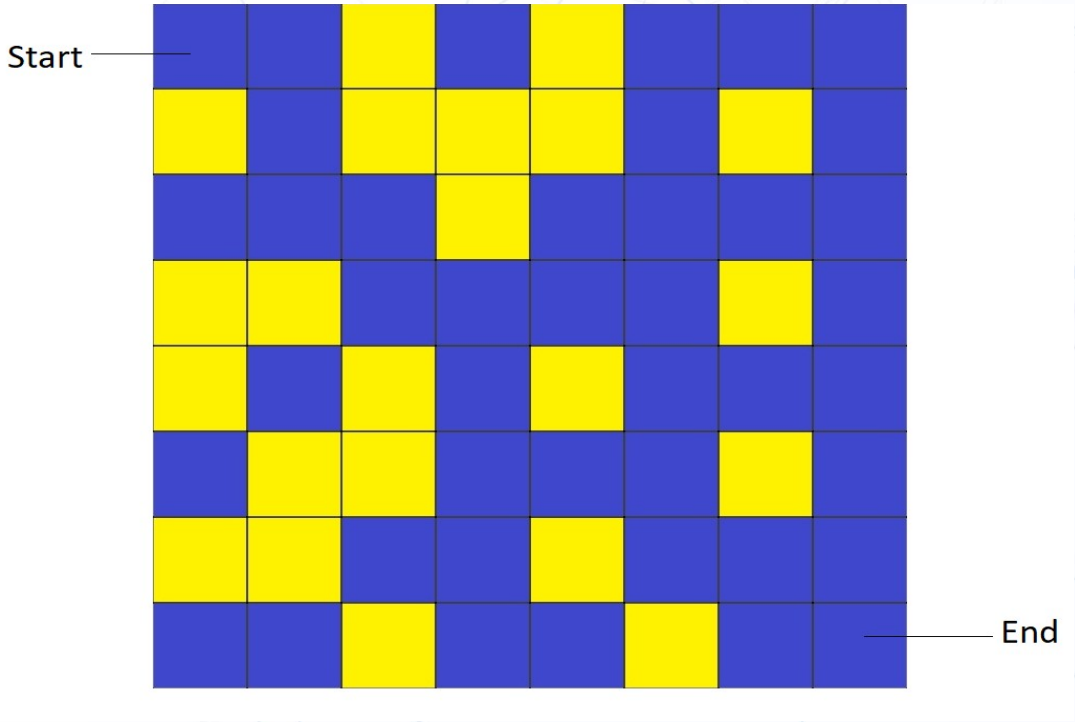

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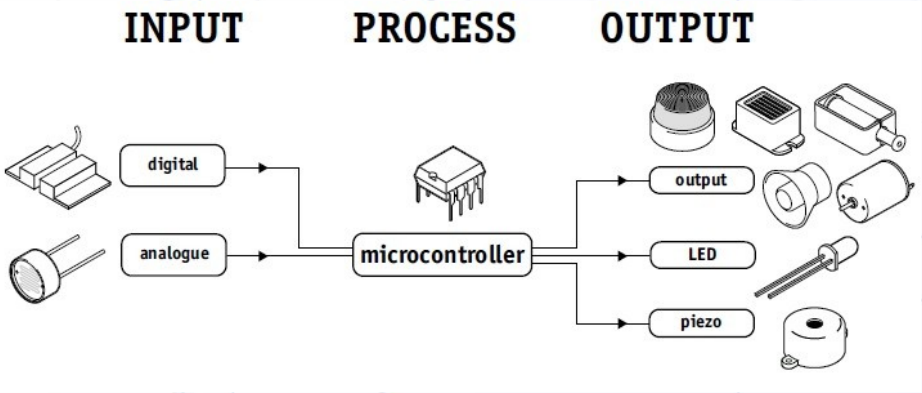
Microcontrollers

Microcontrollers

The Brain of the Robot



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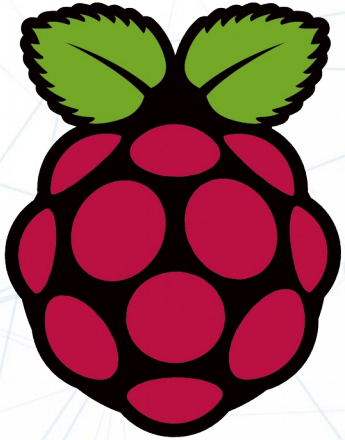
Microcontrollers



ARDUINO™

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Computer-Aided Designing (CAD)

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Computer Aided Designing

“You don’t just start building a robot and pray that it would work!”

- The Great Saurabh Ranjan

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Computer Aided Designing

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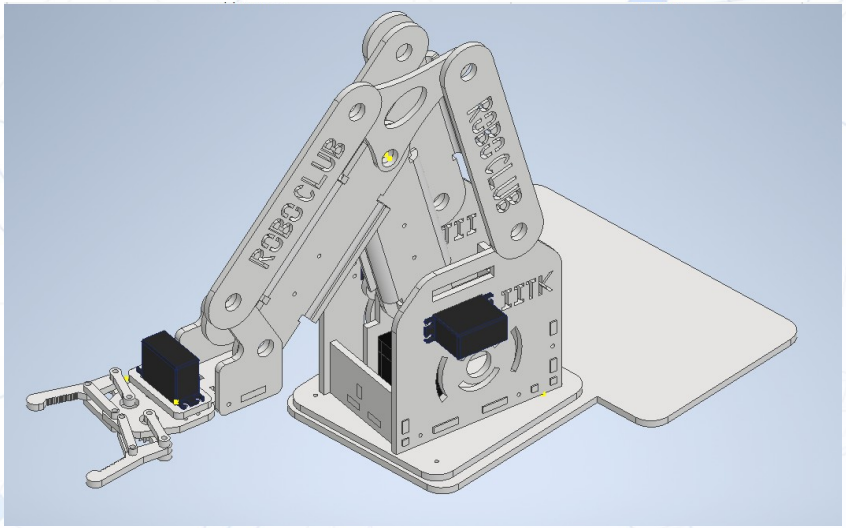
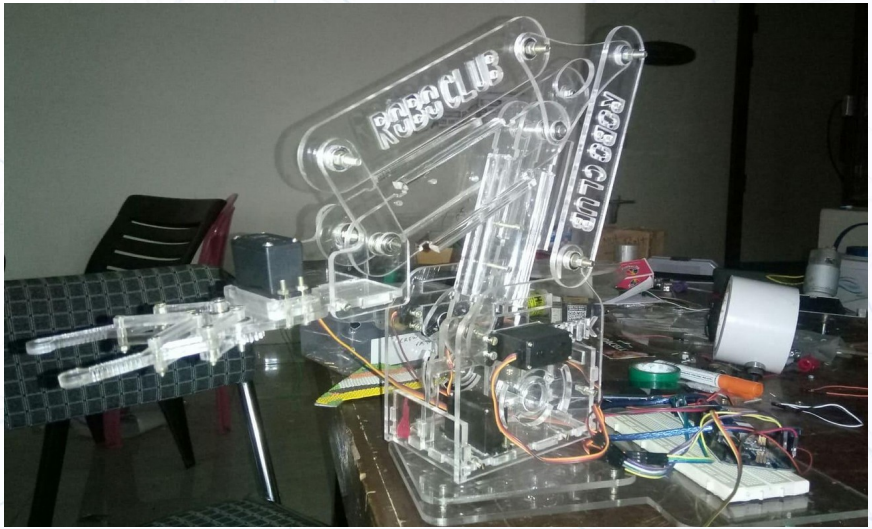
Computer Aided Designing





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Computer Vision

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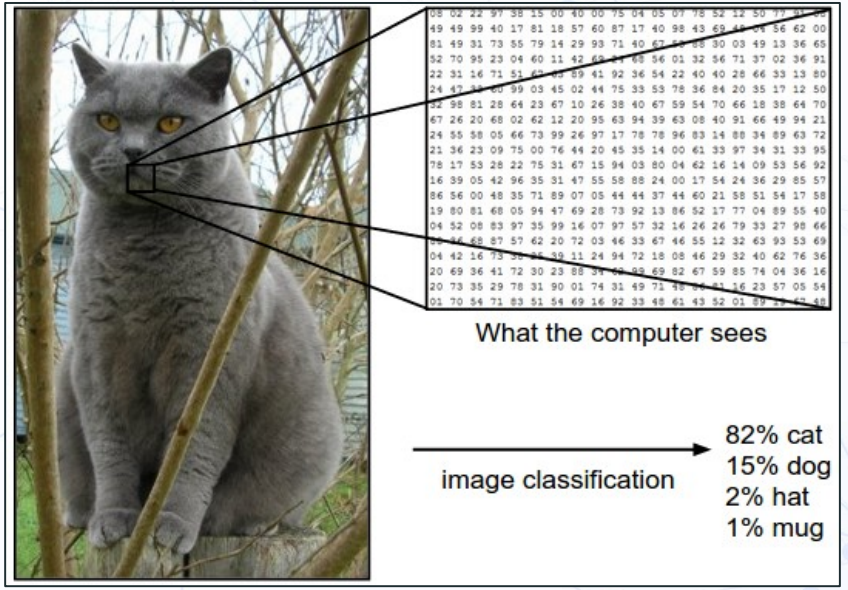
Computer Vision

- Image is a matrix of pixels
- We need to extract/detect and track our objects of interest
- We pass image through a processing pipeline before extracting features
- We will cover
  - Image Processing
  - Feature Extraction
  - OpenCV library



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Robot Operating System (ROS)

Robot Operating System

- The Robot Operating System is a collaborative effort to create a robust, general purpose mechanism for creating applications for robotics
- We will cover
  - Filesystem for ROS
  - Nodes
  - Messages, Topics
  - Packages

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Contact us if you have any problem/ suggestion:

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