|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Robots | Human Interactions | Techniques (Technologies) | Functionality | Extra Modules |
| ABB YuMi | Asking for scenario  Suggest type of necktie,  Colour recommendation | Computer Vision  Machine Learning study for colour code matching  Speech recognition | Tie a tie | Camera  Speaker  Microphone |
| Drone | Human input | Face recognition  Routes tracking  3D mapping  Auto flying | Finds a person | Camera  GPS  Speaker |
| Drone/  wheelie | Excuse me | Routes tracking  Object recognition  Machine learning to minimize power consumption | Transport things | Camera  GPS |
| ABB YuMi | Chat | Learn from past art works (Style, moods, expression,) | Paint | Speaker  Microphone  Camera  Painting kits |
| ABB YuMi | Encourage or Criticise | Analyse art piece | Help kids finalizing art piece | Camera  Painting kits |
| Wheelie | Mode selection | Routes tracking  Object recognition  Sound localization | Moving rubbish bin | Camera |
|  |  |  |  |  |

**Drone/Wheelie**

Drone to record videos following person, move according to gestures, fly to the point by touching on the map

* Routes tracking
* Gesture recognition
* Person recognition
* Object recognition
* Machine learning to minimize power consumption

Need

* Camera
* App – small map, 3d modelling

**Tie a tie**

Help make a knot, use machine learning to give suggestions on colours and types of tie.

Move arms to teach the robot.

* Computer Vision
* Machine Learning study for colour code matching
* Speech recognition

Need

* Camera
* Speaker
* Microphone

**Help kids finalizing art piece**

Recognize art piece when finished painting, use ml to finalize the art piece. Print/project the finalized art.

Need

* Camera
* Printer/projector