README

Inter IIT Tech Meet 11.0

Robotic Charging Challenge

Note - This document consists of name and description of the files/folders submitted or from which results can be displayed

Table of Contents

Section A: Port Location Detection (Image Processing)

A1	cvapproach_clearimages.m
A2	cvapproach_featurematching.m
A3	cvapproach_unclearimages.m
A4	Google Colab Link for DL based port search.txt

Section B: CAD Model and Bill of Materials

B1	Prismatic_joint_robotic_arm.step	(Sorted)
B2	Multi_link_robotic_arm.step	(Sorted)
B3	Actuated motion.mp4	(Sorted)
B4	Multi-link Forward.mp4	(Sorted)
B5	BOM_Prismatic_Joint.pdf	(Sorted)
B6	BOM_Multi_Link.pdf	(Sorted)

Section C: Control Systems and Power Consumption

C1	Control	
C2	power consumption	

Section D: Brownie point (opening charging port door)

D1	Link to colab notebook	1

Section A: Image Processing

A1 Open the file in matlab and run to get the result, **images_test** is the test data

A2 Open the file in matlab and run to get the result, **images_test** is the test data

A3 Open the file in matlab and run to get the result, **images_test** is the test data

A4 Run the **colabnotebook** to get the result, **images_test** is the test data

Section B: CAD Model

B1 The file consists of **prismatic joint model assembly** in form of STEP file

B2 The file consists of **multi link model assembly** in form of STEP file

B3 The video file consists of **prismatic joint model** animation

B4 The video file consists of **multi link model** animation

B5 Open the file to get the Bill Of Materials of **prismatic joint approach**

B6 Open the file to get the Bill Of Materials of **multi link approach**

Section C: Control Systems & Power Consumption

C1 Open the file and follow readme instructions inside for plots check **for plots** folder for animations check **for animations simulink** folder

C2 Open the folder and then open **power_calc_prismatic.m** file in matlab and run to get the trajectory of the **prismatic joint based** approach

Open the folder and then open **power_calc_manipulator.m** file in matlab and run to get the trajectory of the **multi link** based approach

Section D: Brownie point (opening charging port door)

D1 Run the **colabnotebook** to get the result