ROC 2021

RoboAnalyzer based Online Competition (ROC)
as Virtual Summer Internship

We certify that this project was undertaken by us for the
"RoboAnalyzer-based Online Competition (ROC)"
conducted by
Dr. Nayan Moni Kakoty of Tezpur University,
Mr. Abhijit Boruah of Dibrugarh University
in collaboration with
Prof. Subir K. Saha of IIT Delhi,
Mr. Rajeevlochana C.G, of Amrita Vishwa Vidyapeetham,
Bengaluru Campus
during 2nd May to 11th July, 2021.

Team - B2

Coordinator	:	Supriya Khatoniar, Tezpur University
Co-Coordinator	:	Abinash Chetia, Dibrugarh University Institute of Engineering and Technology (DUIET)
Member	:	Shaurya Surana, MIT- World Peace University

DESIGN AND METHODS

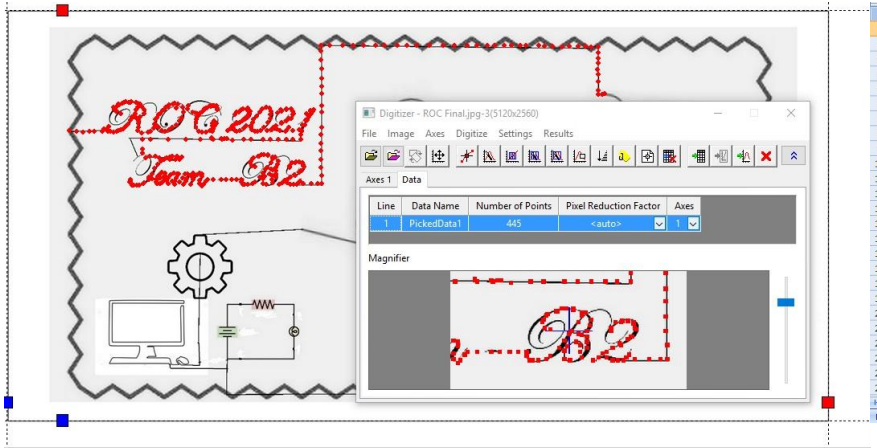
Idea behind our Design:

- Robotics is an integrated branch of engineering that includes Mechanical, Electrical, Computer Science, etc.
- Collaborative Robots are in current trend, which make the workspace effective and efficient with Human interaction
- When Indian companies buy an industrial robot, most of the times it's from a foreign vendor like FANUC, ABB, Kawasaki, Yasakawa and KUKA.
- To promote 'Made in India' Robotic Systems, we choose 'Make In India' to be part of our project.

Steps of Implementation:

1. Brainstormed the idea for our final task
2. Selected the robot to be used i.e., KukaKR5_IND
3. Defined the coordinates for Top and Front Planes
4. Made a template for Front Plane and Top Plane (Frame, Content, Heading, Names)
5. Plotted individual points of the templates using OriginPro software and PlotDigitizer online-application
6. Aligned the values for respective axes and merged the CSV files
7. Run the CSV file on RoboAnalyzer - Virtual Robot Module

EXTRACTION OF POINTS FROM IMAGE & GETTING INTO CSV FILES



	A	B	C	D	E	F
1	800	-593.232	683.7775	90	0	90
2	800	-588.783	696.2696	90	0	90
3	800	-579.886	706.0848	90	0	90
4	800	-573.657	713.2231	90	0	90
5	800	-579.886	719.4691	90	0	90
6	800	-587.893	731.0689	90	0	90
7	800	-597.68	742.6686	90	0	90
8	800	-589.673	753.3761	90	0	90
9	800	-584.334	759.6221	90	0	90
10	800	-579.886	767.6527	90	0	90
11	800	-574.547	772.1141	90	0	90
12	800	-578.996	782.8215	90	0	90
13	800	-585.224	789.0676	90	0	90
14	800	-591.452	798.8827	90	0	90
15	800	-595.011	803.3442	90	0	90
16	800	-588.783	811.3748	90	0	90
17	800	-584.334	816.7285	90	0	90
18	800	-578.106	829.2205	90	0	90
19	800	-570.988	833.682	90	0	90
20	800	-564.76	836.3588	90	0	90
21	800	-554.083	843.4972	90	0	90
22	800	-548.745	846.174	90	0	90
23	800	-542.517	842.6049	90	0	90
24	800	-534.509	837.2511	90	0	90
25	800	-524.722	831.8974	90	0	90

Final data Team B2 ROC_2021

Ready

Obtaining points using OriginPro software and converting those into CSV file with required table format

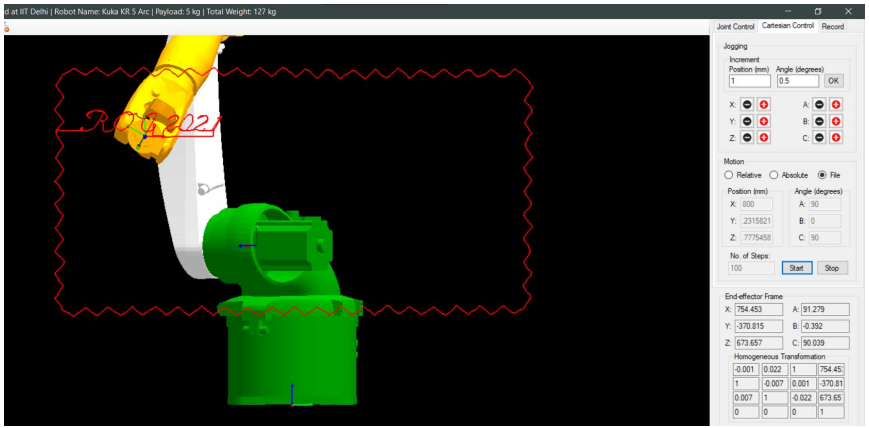
Obtaining points using PlotDigitizer and converting those into CSV file with required table format

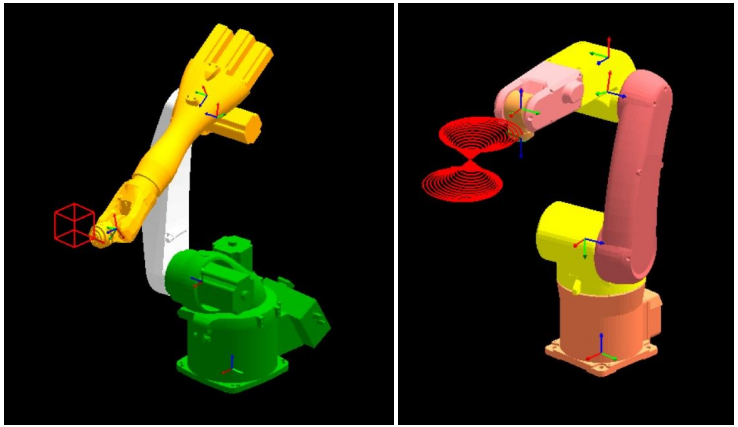
	A	B	C	D	E	F
5320	800	592.8806	896.2506	90	0	90
5321	800	592.8806	899.723	90	0	90
5322	798.1528	599.2934	899.723	90	0	90
5323	793.816	599.2934	899.723	90	0	90
5324	789.4792	599.2934	899.723	90	0	90
5325	785.4522	599.2934	899.723	90	0	90
5326	781.1154	599.2934	899.723	90	0	90
5327	777.0884	599.2934	899.723	90	0	90
5328	772.7516	599.2934	899.723	90	0	90
5329	768.7246	599.2934	899.723	90	0	90
5330	764.3878	599.2934	899.723	90	0	90
5331	760.051	599.2934	899.723	90	0	90
5332	756.024	599.2934	899.723	90	0	90
5333	751.6872	599.2934	899.723	90	0	90
5334	747.6602	599.2934	899.723	90	0	90
5335	743.3234	599.2934	899.723	90	0	90
5336	739.2964	599.2934	899.723	90	0	90
5337	734.9596	599.2934	899.723	90	0	90
5338	730.9326	599.2934	899.723	90	0	90
5339	726.5958	599.2934	899.723	90	0	90
5340	722.259	599.2934	899.723	90	0	90
5341	718.232	599.2934	899.723	90	0	90
5342	713.8952	599.2934	899.723	90	0	90
5343	709.8682	599.2934	899.723	90	0	90
5344	705.5314	599.2934	899.723	90	0	90

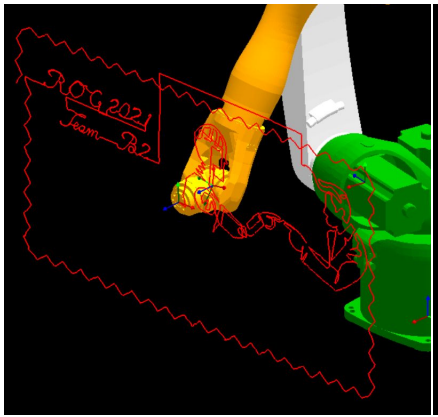
Final data Team B2 ROC_2021

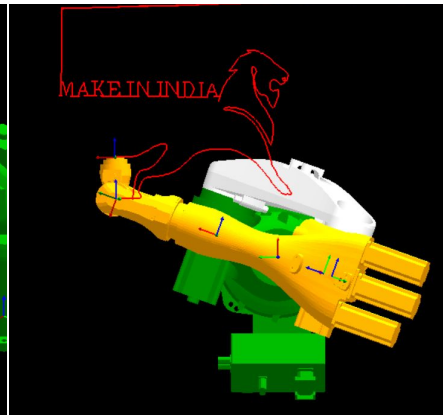
Ready

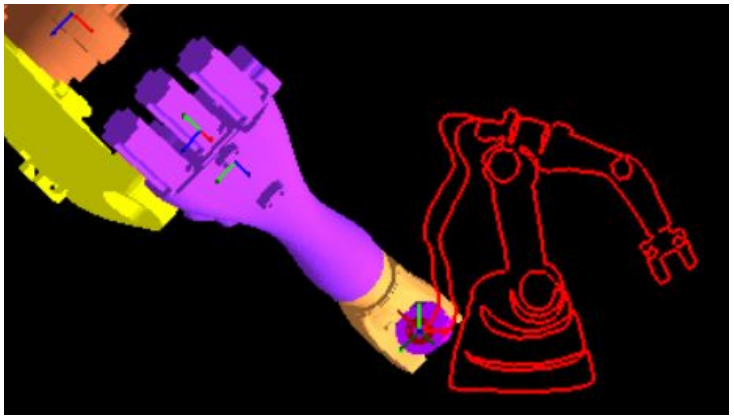
PROGRESS OF THE FINAL DESIGN ALONG WITH OTHER DESIGNS USING ROBOANALYZER





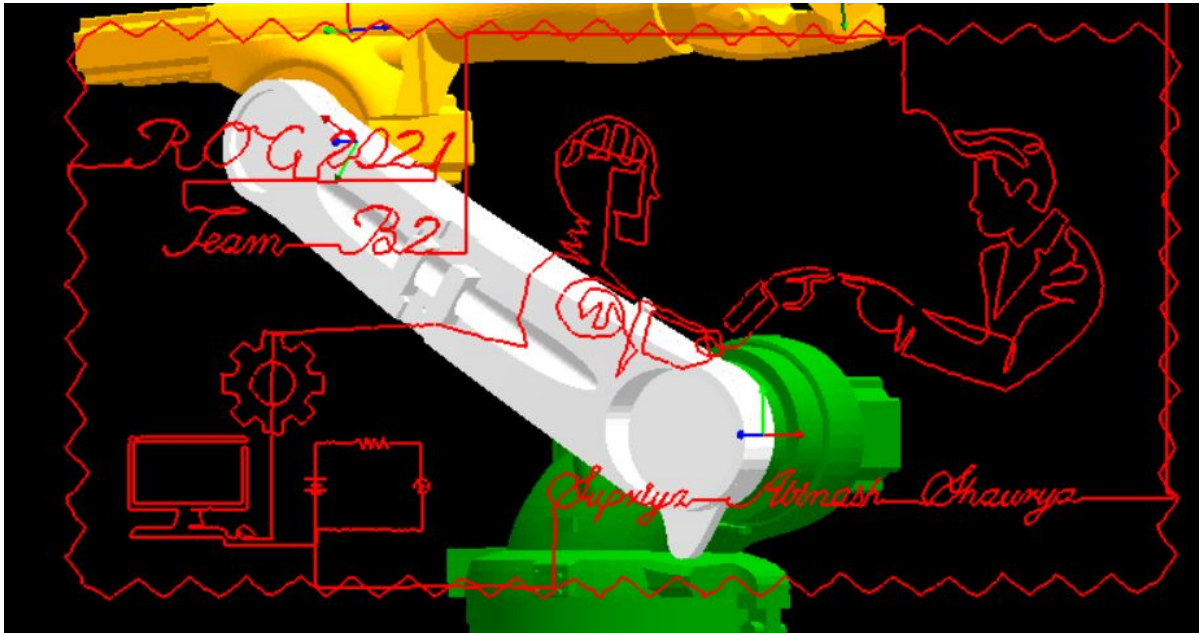






FINAL DESIGN

FRONT VIEW



ISOMETRIC VIEW