ELEG4701

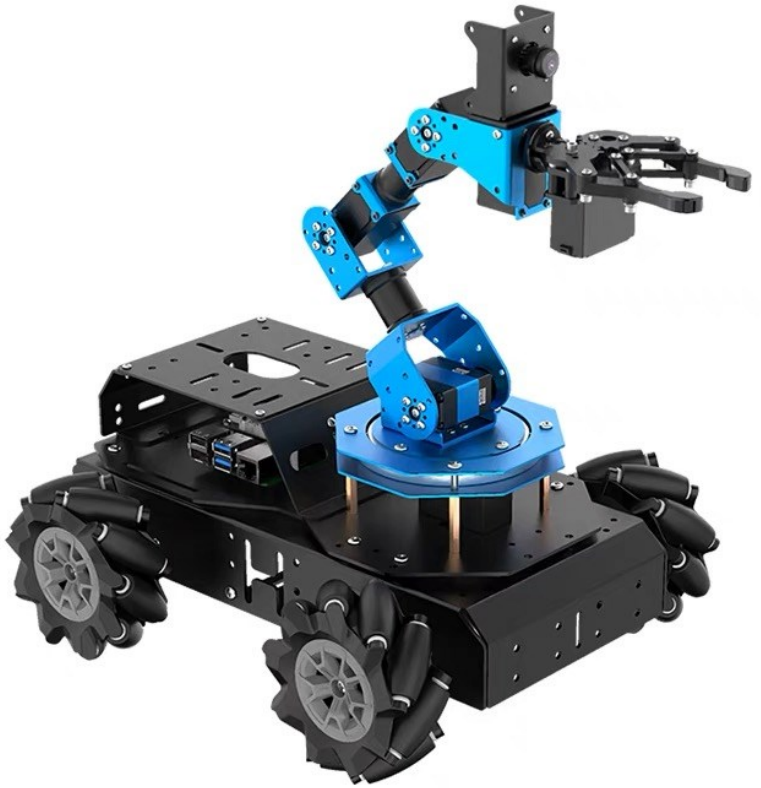
Final Practical Project

(Group project)

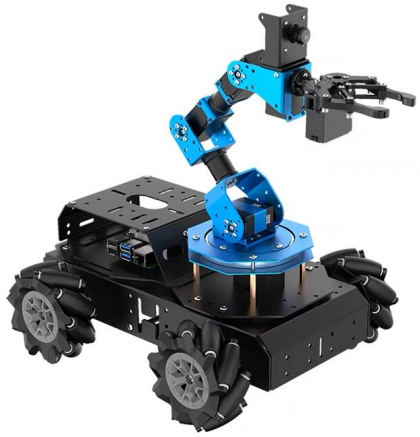
30% of ELEG4701

Platform

- Name: ArmPi Pro Robot
- MCU: Raspberry Pi
- ROS & Python
- Moving and Scaping



Timeline



TODO: Grouping: Before February 2

- Freely form 5 groups (at least 4 people/group).
- Each group needs to choose a **group leader** who is responsible for robot collection, maintenance, and final submission.
- Inform me of the **Group Member List** via email.

Q&A: Students may consult the corresponding TA from time to time

Presentation: (April 16)

- Each group will have 20 minutes to showcase the final demo
- Please submit **ONE final report** (*clarify individual contributions of each member*) & and **codes**

Timetable

Every Tuesday afternoon – 14:30 – 18:15 @SHB210

• Jan 9:	Lab 1	Intro to VM & Ubuntu & Install WA	-
• Jan 16:	Lab 2	Intro to Python and Practice WA	** Lab sheet 2
• Jan 21:	-	Add/drop on CUSIS	
• Jan 23:	Lab 3	Intro to ROS YM	** Lab sheet 3
• Jan 30:	Lab 4	ROS Topics / Proj. Grouping YM	** Lab sheet 4
• Feb 6:	Lab 5	ROS Service & Client YM	** Lab sheet 5
• Feb 13:	Holiday	-	-
• Feb 20:	Lab 6	ROS Navigation TY	** Lab sheet 6
• Feb 27:	Lab 7	Intro to Sensors TY	** Lab sheet 7
• Mar 5:	Reading Week	-	-
• Mar 12:	Lab 8	Lidar-based Navigation WT	** Lab sheet 8
• Mar 19:	Lab 9	Visual Servoing for Mobile Robots WT	** Lab sheet 9
• Mar 26:	Lab 10	Intro to Robot Arm RJ	** Lab sheet 10
• Apr 2:	Lab 11	Intro to Manipulation RJ	** Lab sheet 11
• Apr 9:	Lab 12	Visual-based Manipulation HYM	** Lab sheet 12
• Apr 16:	Project Demo	Group Project Demo	** Demo
• Apr 23:	Make-up class	(if any)	-

Course Instructor and TAs

Course Instructor: LAI Jiewen (Research Assistant Professor)

- jiewen.lai@cuhk.edu.hk

Teaching Assistants

- ZHANG Yameng (1155171880@link.cuhk.edu.hk)
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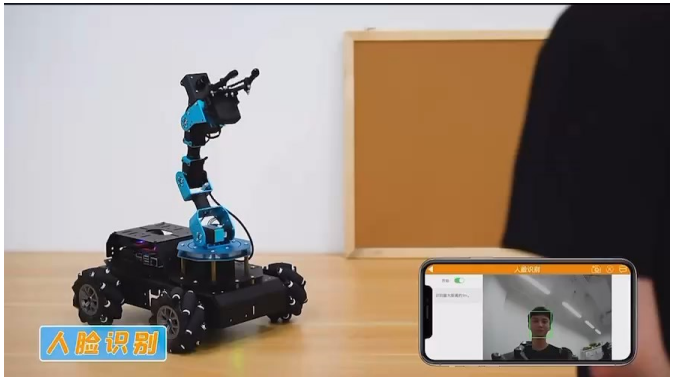
Topics



Smart Palletizing

Autonomous Transport

Smart Grasping

Target Tracking

PS: Detailed tasks and descriptions will be released in the topic guidance

Submission 1: Final Group Report

Report Outline for your reference

1. Introduction (incl. individuals contribution)
2. Objective(s)
3. System Description
4. Methodology
5. Results (pictures / quantitative measurables)
6. References (if any)
7. Reference main code

Submission 2: Video Demo(s)

1. Submit 2-3 video demos (no more than1 minute for each video)

Submission 3: Code Repo

1. README.txt sufficient for others to reproduce your code
2. Codes