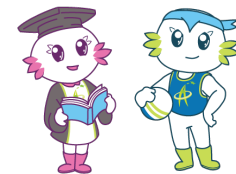香 港 資 優 教 育 學 苑
The Hong Kong Academy for Gifted Education
香 港 特 別 行 政 區 政 府 教 育 局 資 助
Subvented by the Education Bureau, the Government of the HKSAR

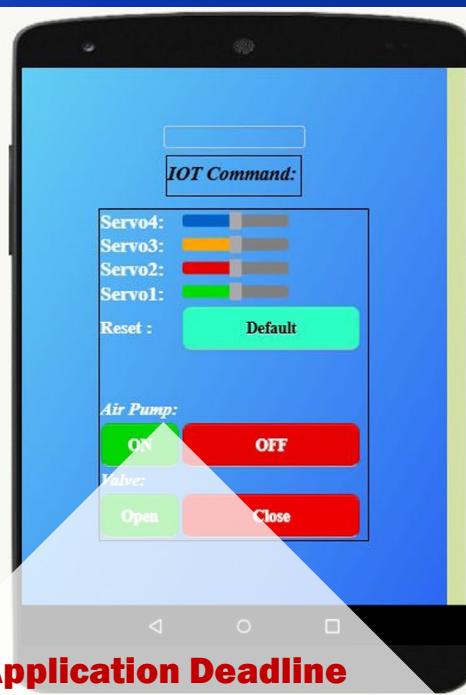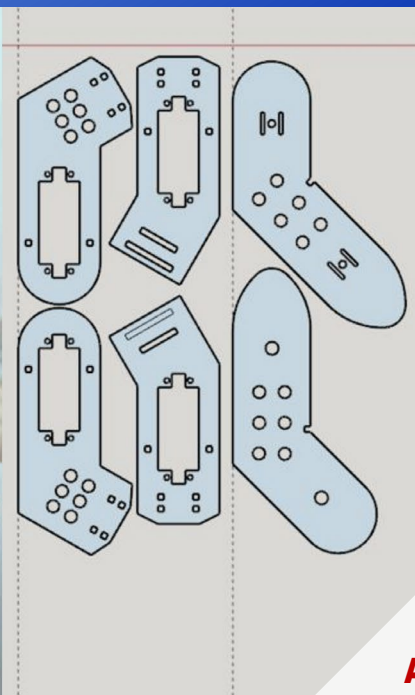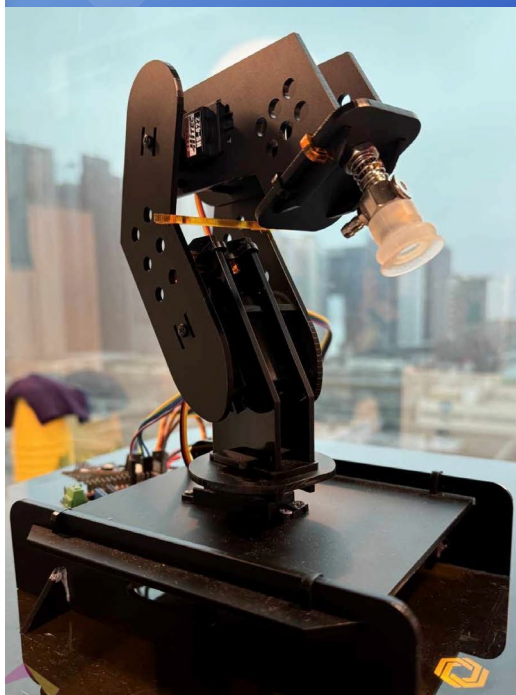Learn about Gigi & Yoyo

[**Gifted Programme**]

E1INO001C
(Token- required)

Innovation Course (Level I):
Building Robotic Arm with Programming Control

Mr Chris Leung (Decatron Innovation Limited)

Application Deadline
29 Sep 2025 12:00 noon

Result Release
30 Sep 2025

Intended Learning Outcomes

Upon completion of the gifted programme, gifted students should be able to:

1. Demonstrate precise mechanical design and fabrication skills through drawing and laser cutting of robotic arm parts.
2. Assemble, debug, and optimize a fully functional robotic arm by employing servo motors and microcontrollers.
3. Apply logical thinking and creative problem-solving skills via programming the arm to perform complex and novel tasks.
4. Reflect critically on both the technical and personal learning journey, setting personal goals for future STEAM projects.

If student members withdraw from the programme after the Application Deadline, the token will be deducted.

◆ Gifted Programme Introduction

In this course, students will design, build, and program a mechanical robotic arm using acrylic boards and laser cutting. Through assembling servo motors, microcontrollers, and connecting the system, students will control the arm with custom coding. Finally, students will develop a mobile app with App Inventor 2 to control the arm remotely via IoT (MQTT protocol). This hands-on course integrates drawing, engineering, programming, and IoT, encouraging creativity and problem-solving.

◆ Schedule

Session	Date	Time	Venue
1	11 Oct		
2	18 Oct		
3	25 Oct	9:30 a.m. – 12:30 p.m.	Decatron Innovation Limited
4	1 Nov		
5	8 Nov		
6	15 Nov		

Address: Decatron Innovation Limited, Unit 03, 19/F, Yen Sheng Centre, 64 Hoi Yuen Road, Kwun Tong, Kowloon.

◆ Suitable for

- P4 – P6 HKAGE student members in 2025/26 school year.
- Class size: 25
- Student members would be selected randomly by the computer system. The decision of HKAGE on the result of the selection should be final.

◆ Pre-requisite

No special prerequisites are needed

◆ Medium of Instruction

Cantonese with English handouts

◆ Certificate

E-Certificate will be awarded to participants who have:

- attended **at least 5 sessions**; AND
- completed all the assignments with satisfactory performance

◆ Enquiries   📞 3940 0101   ✉ programme@hkage.org.hk