



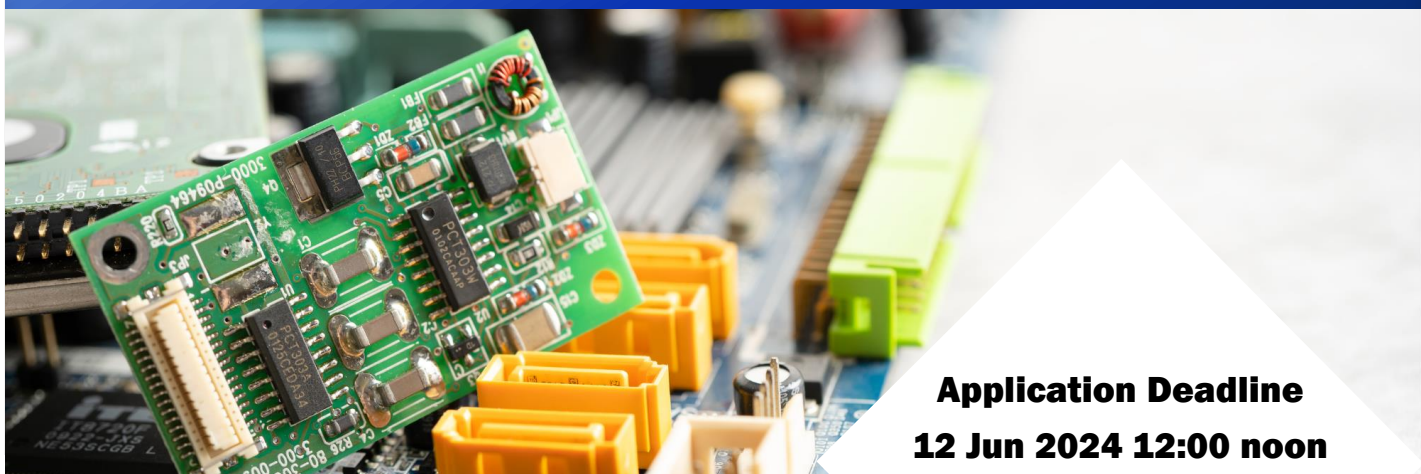
A2COD001C

(Token- required)

[**Gifted Programme**]
Coding Course (Level II)

Microelectronics and Chip Designer

TURNED-E! Education Limited



Application Deadline
12 Jun 2024 12:00 noon

Result Release
14 Jun 2024

Intended Learning Outcomes

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

1. gain a fundamental knowledge of Python;
2. integrate coding and AI tools to do image processing;
3. equip with the skills and mindsets of microelectronics and chip engineer;
4. enhance students' skills in technical, problem solving, creativity and design thinking.

◆ Introduction

Course Introduction

This course will teach students how to use the Avnet Ultra96 development board based on the AMD Xilinx MPSoC architecture, the AMD Vivado design suite, and the PYNQ development environment for FPGA development in image processing and embedded systems. It will delve into the study of image processing techniques using OpenCV, including image manipulation, filtering, transformation, and object detection.

Upon completion of the course, students will be able to apply the knowledge gained in areas such as computer vision development and FPGA development to deploy an artificial intelligence-based PCB circuit board defect detection system on the Ultra96.

◆ Schedule

	Session	Date	Time	Venue
1	Open CV UI design	17 July (Wed)	09:00am – 12:00noon	HKAGE
2	Fundamental of FPGA	24 July (Wed)	09:00am – 12:00noon	
3	Ultra96 PYNQ	31 July (Wed)	09:00am – 12:00noon	
4	Train and design image processing AI model	6 Aug (Tue)	09:00am – 12:00noon	
5	FPGA computer vision application	13 Aug (Tue)	09:00am – 12:00noon	

◆ Target Participants

S1 – S6 HKAGE student members in 2023/24 school year

- Class size: 20
- Student members would be selected randomly by the computer system. The decision of HKAGE on the result of the selection should be final.

◆ Requirements

The following equipment is required for students to participate in the course:

- Notebook with USB port;
- Mouse

◆ Medium of Instruction

Cantonese

◆ Certificate

E-Certificate will be awarded to participants who have:

- Attend at least 4 sessions; AND
- Completed all the assignments with satisfactory performance

◆ Enquiries

☎ 3940 0101

✉ programme@hkage.org.hk