



聖公會李福慶中學
SKH LI FOOK HING
SECONDARY SCHOOL

Teaching Artificial Intelligence On a Hybrid Learning
Platform in Preparation for Students' Continuous Learning
實踐停課不停學：以混合式學習平台教授人工智能

9 December 2021





聖公會李福慶中學

SKH Li Fook Hing Secondary School

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**MVT, MSIE, Google Certified
Trainer, Apple Teacher in iPad
& Mac, VR/AR, eLearning, etc...**



聖公會李福慶中學



Personalized Learning

個人化學習的四大元素

Source: Gates Foundation's "Working Definition" of Personalised Learning



STEM Skills, Academic and Career



What is STEM?



Science



Engineering

S

T

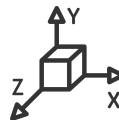
E

M

Technology



Mathematics



"Everybody in this country should learn how to **program a computer** because it **teaches you how to think**"

Steve Jobs

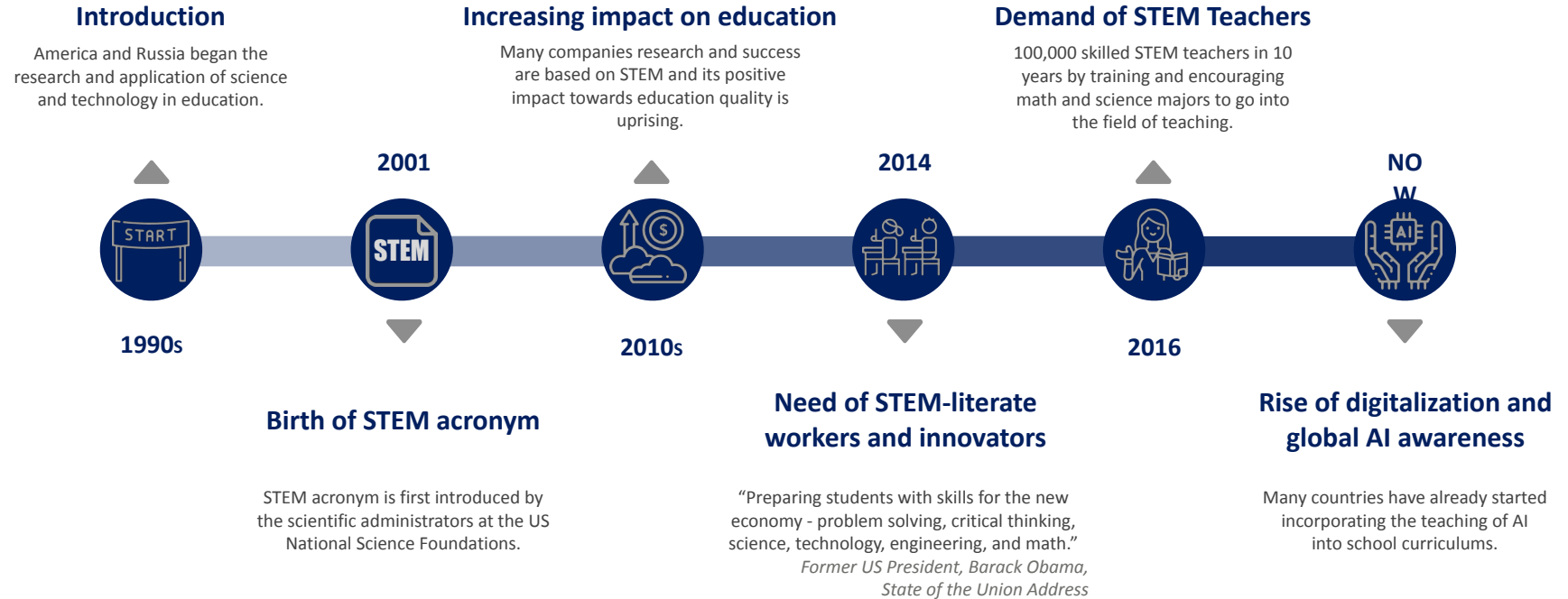
"**Learn** how to see. **Realize** that everything **connects** to everything else"

Leonardo da Vinci

"**60% of the jobs opening** in the 21st century will require **skills that only 20%** of the American workforce now possesses"

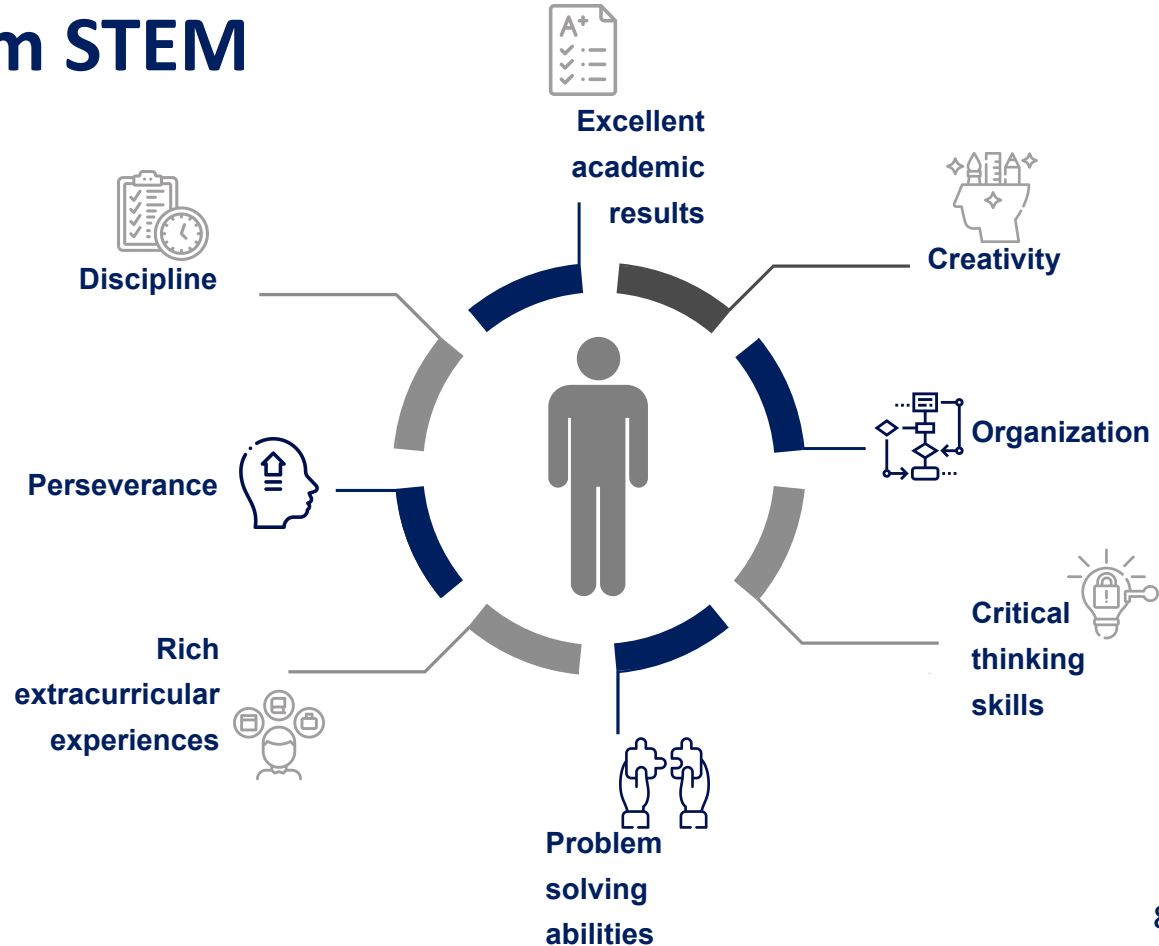
US Department of Education

Timeline of STEM and AI Education



Personal Traits from STEM

Individuals with **STEM, Coding and AI** experience stand out among thousands of students, as these students usually possess the following desirable qualities and skills, such as:



Why Focus on Coding and AI in STEM?

Mathematics



1 year of coding



Student academic scores **+ 2.73**

2 years of coding

Creativity



1 year of coding



Standard deviation mean scores

+ 0.14

2 years of coding

Problem Solving



1 year of coding



+ 0.20

2 years of coding

Critical Thinking



1 year of coding



+ 0.10

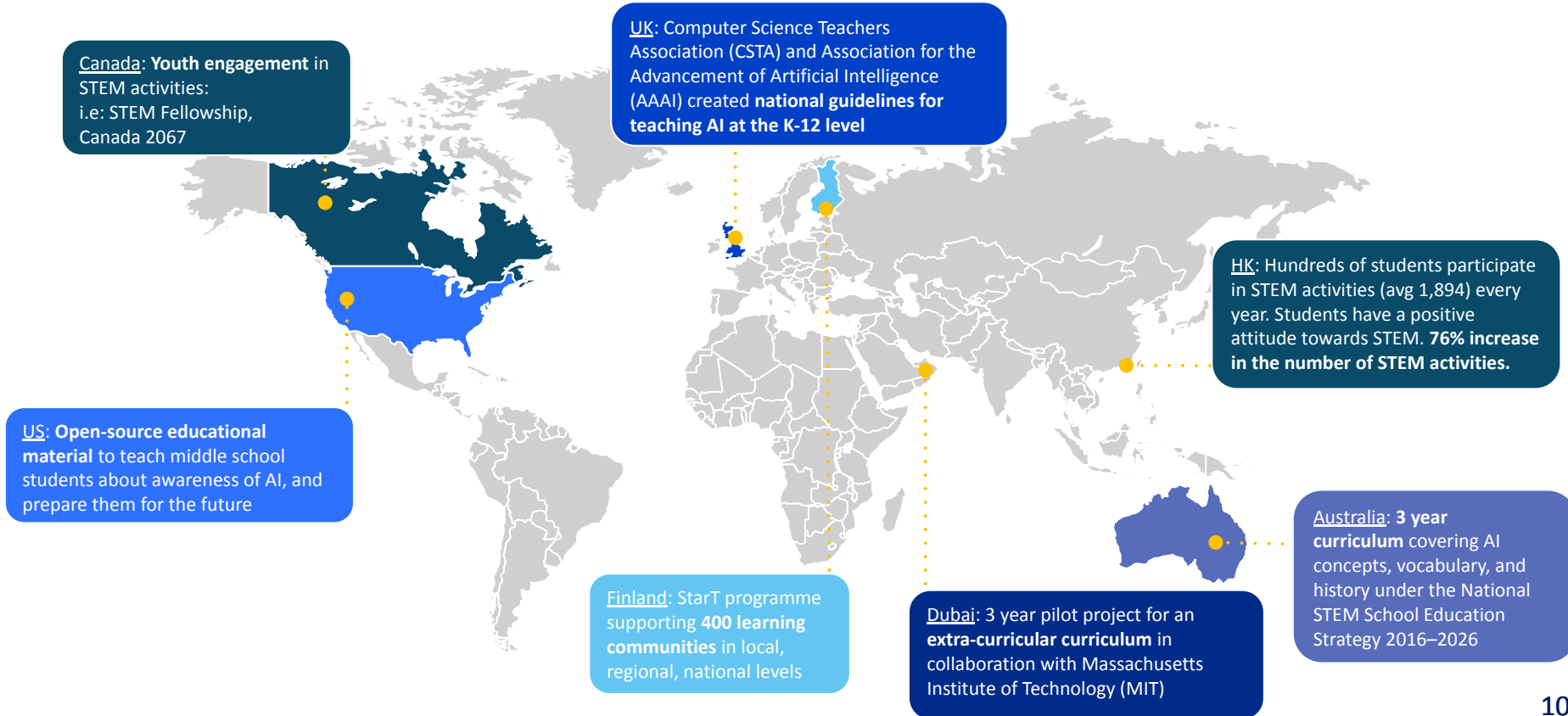
2 years of coding

Build desirable skills in achieving academic results for **top university admission**

Exposure to coding activities **enhances results** in Mathematics, General Studies

Acquire skills in **creativity, critical thinking and problem solving**

Current STEM and AI Developments in Schools Worldwide



Problems we are Solving: Global Coding, STEM & AI Skills

**70% + STEM jobs require
a bachelor's degree**

**Skills shortage costing STEM
sector £1.5bn**

Global AI Skills Crisis

STEM employees earning a median annual wage, **USD \$86,980, that is more than double** the average amount paid to non-STEM workers.

U.S. Bureau of Labour Statistics in 2019

A study in UK shows that current **shortfall of 173,000 skilled workers as 89% of STEM businesses struggle to recruit,** and new STEM roles are expected to be doubled in the **next 10 years**

A report by STEM Learning in 2018

There are about **300,000 “AI practitioners and researchers”** worldwide, but **millions of roles available** for people with these qualifications

MIT Technology Review

STEM Skills, Academic and Career



Benefit 1 - College Admission (Hong Kong)

University	Faculty / College / Department	Requirements
The Chinese University of Hong Kong	Science, Engineering	Achieve at least 3 stars in 3 STEM elective subjects
The Hong Kong University of Science and Technology	Science, Engineering	Achieve at least 3 stars in 3 STEM elective subjects
City University of Hong Kong	Engineering	3 core subjects meeting 3-3-2-2 ; Good HKDSE results in 2 STEM elective subjects
The Education University of Hong Kong	Information and Communication Technology, Mathematics, Science	Priority of admission to students with talents in STEM

Special Admission Schemes:

including students who fail to meet the University minimum entrance requirement of the 4 core subjects
(i.e. - 3322 in Chinese, English, Mathematics and Liberal Studies)

STEM Elective Subjects:

Biology / Chemistry / Physics / M1 or M2 / Combined Science or Integrated Science / Information and Communication Technology / Design and Applied Technology



STEM Skills, Academic and Career

Benefit 1 - College Admission (Worldwide)



US:

Students with qualifications in STEM subjects can enjoy **extended F1 visa status** to continue study or work after graduation.

Most scholarship and financial aid requires a **SAT Math score of 600+** out of a total of 800.



Australia:

Focus on applicants who possess **knowledge in Science, Mathematics**, and have **know-how on digital technologies** (i.e coding, AI)

Additional **scholarship up to 20% of tuition** for applicants pursuing degree in Faculty of Science/ Engineering



US:

Students with qualifications in STEM subjects can enjoy **extended F1 visa status** to continue study or work after graduation.

Most scholarship and financial aid requires a SAT Math score of 600+ out of a total of 800.



Problem



Growing demand of tech personnel and wide promotion of STEM Education

- **>85M global shortage**, resulting in USD 8.5 trillion in lost annual revenue by 2030¹
- In FY22, several USD >1 billion funds from US Gov²
- In Asia Pacific, 87% believe that investments in STEM will improve the economy in 2021.³



12% drop in students' interest in STEM found in US! ⁴

>50% teachers reported key reasons behind are ...

Time pressure & Poor resources



[1] Korn Ferry Study Reveals Global Talent Shortage Could Threaten Business Growth Around the World ([Link](#))

[2] FY22 Budget Request: STEM Education ([Link](#))

[3] Public trust in science boosted by pandemic, survey finds ([Link](#))

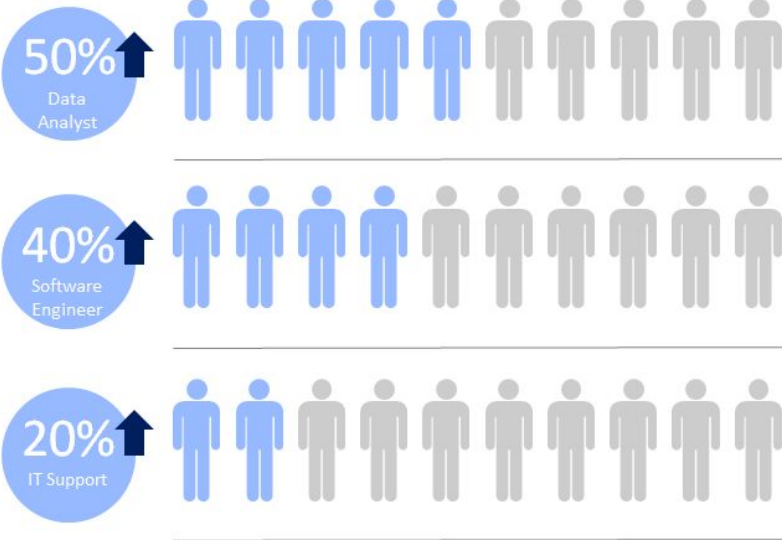
[4] Children's interest in STEM subjects is in decline, IET research shows ([Link](#))

STEM Skills, Academic and Career

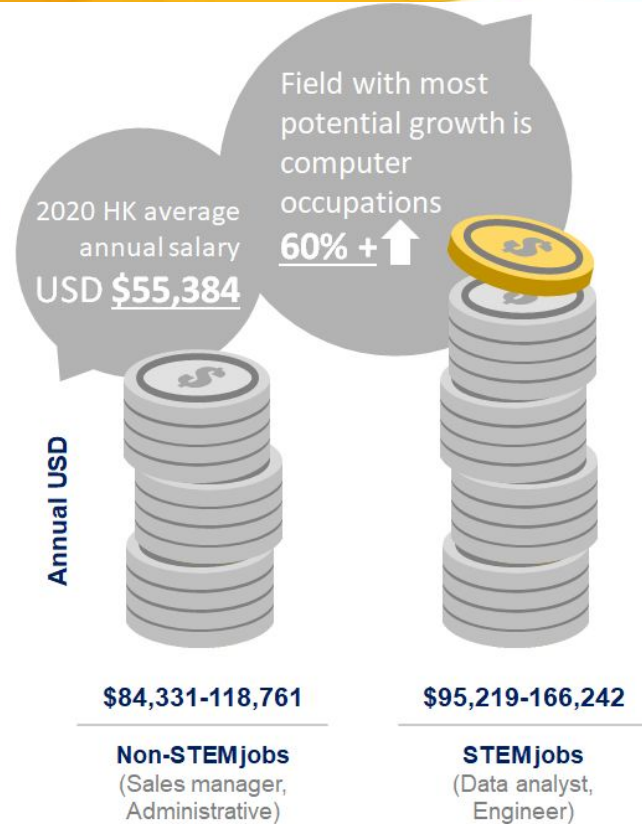
Benefit 2 - Career Path

STEM studies lead to many of the fastest-growing careers in the world, so **STEM employers are always seeking additional qualified professionals.**

% Growth in Demand for STEM Professionals



Fastest Growing Jobs by LinkedIn



Jobs Earnings in Hong Kong 2020 by Teleport

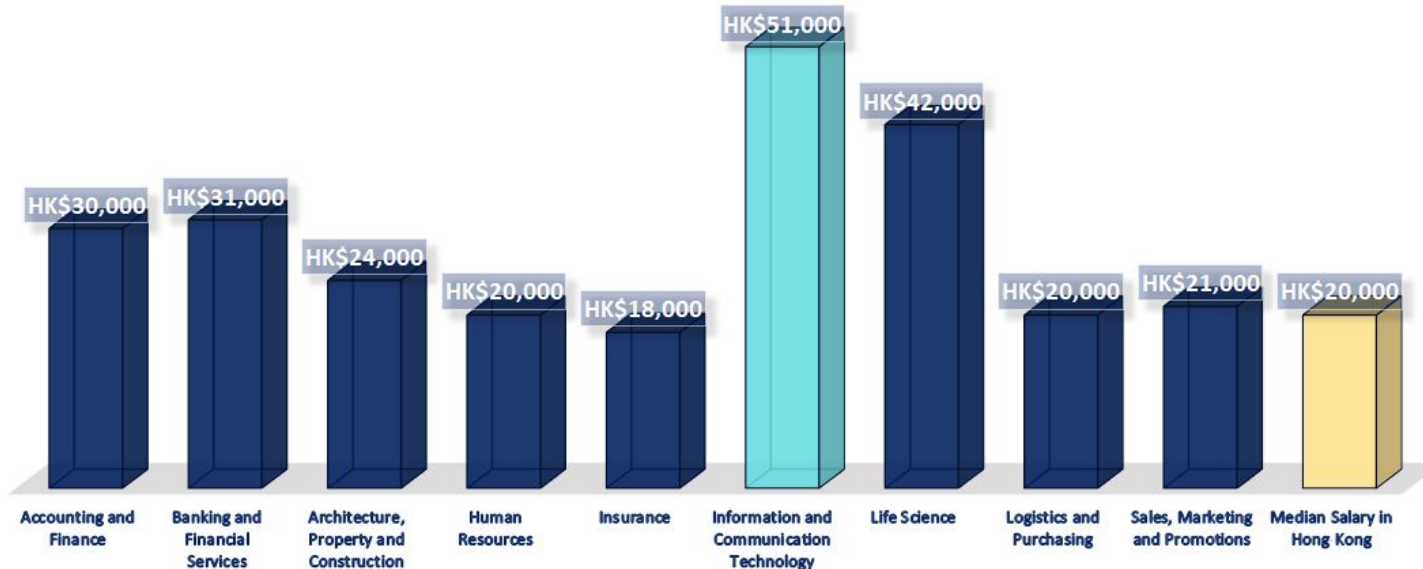


Benefit 2 - Career Path

Salary Comparison in Hong Kong

ICT related jobs outweigh other
job sectors

Entry Level Monthly Salary of 9 Major Job Sectors in Hong Kong 2020



Benefit 3 - 21st Century Skills



Creativity

US managers and executives claim **4Cs are priorities** for employee development, talent management and succession planning.

Critical Skills Survey



Communication

Employers find students **unprepared** for the workforce as they **lack the 4Cs** needed in 21st Century – the skills that will **make them successful**.

The Washington Post



Critical Thinking



Collaboration

STEM shape a **creative and critical thinking mindset**. It develops **problem-solving abilities** and a sense of **curiosity**.

STEM Education Helps Students Think Critically





智慧圖書館3.0

★ 無線射頻(RFID)辨識系統



智能還書機

智能借還書籍



智能盤點書籍

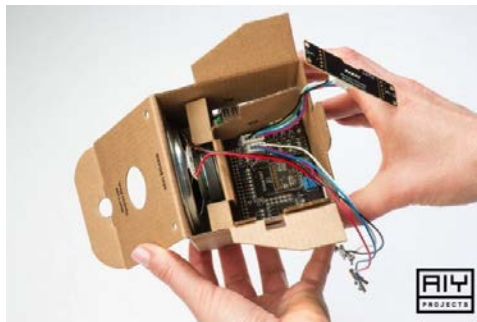
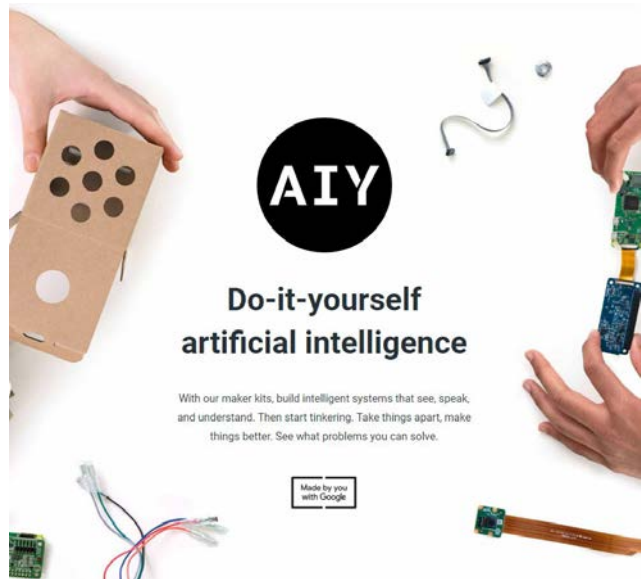


Library Stock Take Robot



學習人工智能(AI)

Google AIY



學習人工智能(AI)



Machine
Learning
for Kids

Machine Learning for Kids

- ❖ 兒童機器學習 (全中文版)
- ❖ Scratch → Python
- ❖ No setup, installs or registration

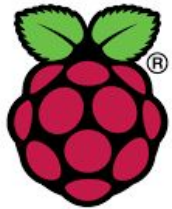
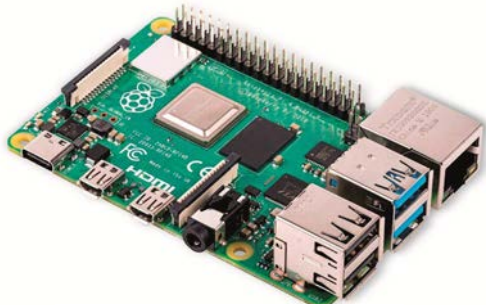
The screenshot shows the Machine Learning for Kids website. At the top, there is a navigation bar with links: 關於 (About), 作品清單 (Portfolio), 新聞 (News), 幫助 (Help), and 登入 (Login). A language selector is on the right. The main heading is 機器學習專案 (Machine Learning Projects). Below it, a paragraph explains that these are step-by-step teaching guides with colorful screenshots for students to follow. It mentions that each project is a standalone activity for a class period, designed to guide children in creating a game or interactive project to demonstrate the application of AI and machine learning in the real world. A note encourages users to submit new project ideas or improvements to the existing ones.

Below the text are three dropdown menus for filtering projects: 全部類型的專案 (All project types), 全部的困難度 (All difficulty levels), and 全部的平台 (All platforms).

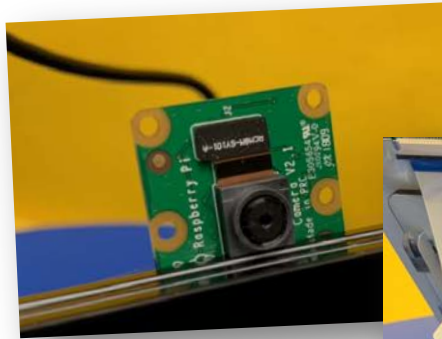
There are four project cards displayed:

- 智慧教室 (Smart Classroom):** In Scratch, build a smart assistant that you can control with voice commands. The computer will recognize your commands. Difficulty: Beginner. Tags: digital assistants, supervised learning. Language: 文字 (Text).
- 逗我開心 (Make Me Happy):** In Scratch, build a character that will smile if you praise it or cry if you scold it. The computer will recognize compliments and insults. Difficulty: Beginner. Tags: sentiment analysis, supervised learning. Language: 文字 (Text).
- 抽卡! (Card Drawing!):** Make a Scratch card game, and the computer will learn to recognize the patterns on the cards. The computer will recognize what the patterns look like. Difficulty: Beginner. Tags: image classification, supervised learning. Language: 圖片 (Image).
- 神奇變色龍 (Magical Chameleon):** In Scratch, make a chameleon that changes color and blends into the background. The computer will recognize different colors. Difficulty: Beginner. Tags: image classification, supervised learning. Language: 圖片 (Image).

把AI模型實體化 Python 實行人工智能物維網 (AIoT)

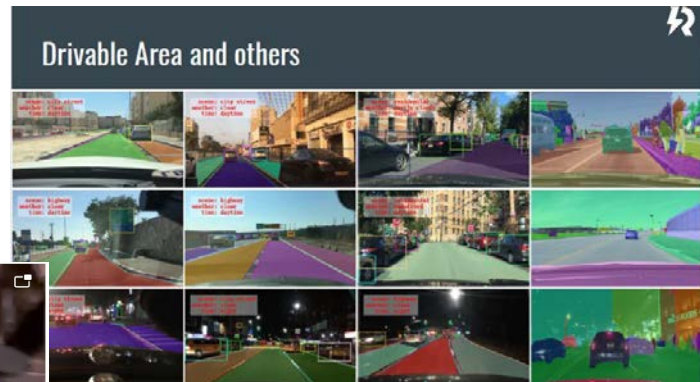
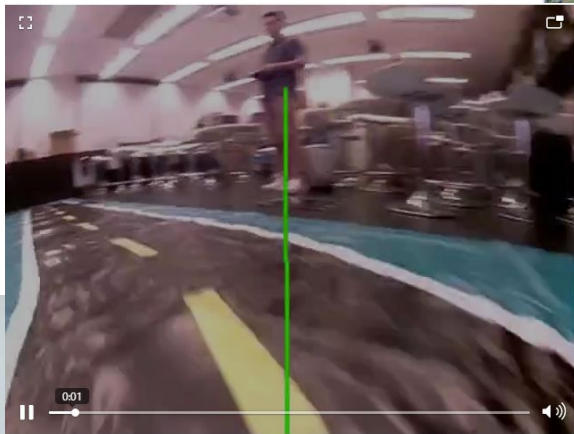


Raspberry Pi



學習人工智能(AI)

人工智能(AI) 無人駕駛車 到校課程服務
透過學習及體驗人工智能
以促進運算思維訓練



Key problems in AI education



❌ Apply

❌ Creativity

Entry barriers

- Very few teachers understand AI
- Due to **prior knowledge** of text-based programming language (e.g. Python)



Lack of management tool using AI technology

- Schools have **no credit card** to subscribe cloud-based AI Services
- **Cannot avoid overspending** cause by student mistake



Cannot support both remote and face-to-face teaching

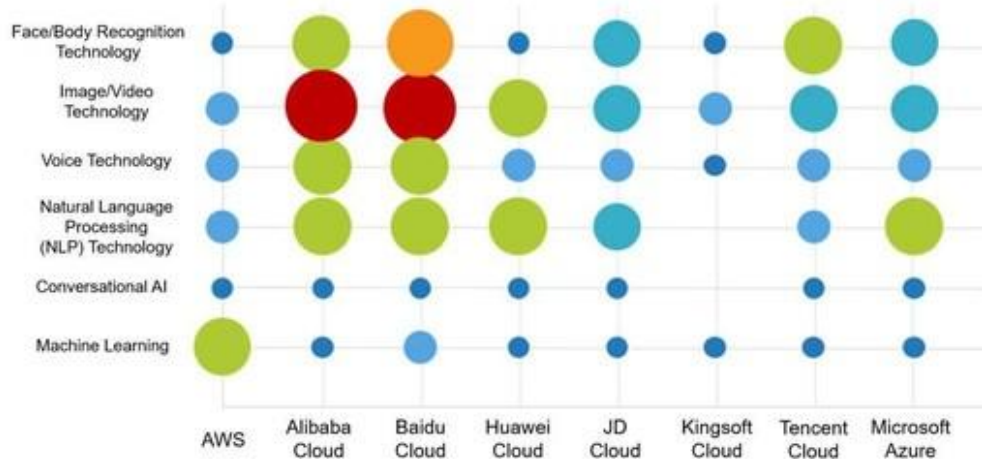
- Few teaching tools are designed for K12 students learning AI and supporting different learning modes



Subscription of AI Cloud Services



Number of AI Public Cloud Products in China



Source: IDC's 2019 Report On China's AI Cloud Market

Note:

1. Above product statistics are derived from public cloud vendors' number of open AI capabilities as of April 2020
2. For AWS and Microsoft Azure, data includes all AI capabilities provided globally.



Micro:bit, Arduino and Raspberry Pi comparison

	micro:bit	Arduino	Raspberry Pi
Price	\$	\$\$	\$\$\$
Functionality	*	**	***
Supported by Una?	✓ by blocks-coding	☐	✓ by blocks-coding and WIFI
Originally designed for education	✓	☐	☐
User-friendly	✓	☐	☐
Readiness out of the box after purchase	✓	☐	☐
Built-in sensors/LED	✓	☐	☐
Usual ways of coding	Block-based	Text-based	Text-based
Difficulty of coding	Easy	Complex	Complex
Usual coding software / OS	✓ MakeCode	✓ Arduino IDE	✓ Python / Linux

Key problems in micro:bit education

Lack of Curriculum

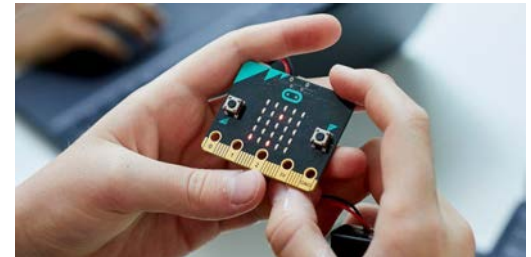
- Under-developed lesson plans, empower Maker activities but lack of coverage in learning basic computational thinking concepts design

Lack of Learning Management Features

- No learning management, evaluation, and assessment support
- Insufficient support for students to conduct self-directed learning without teachers' supervision

Lack of Technical Support

- Lack of technical guidance to users how to use micro:bit with different sensors correctly.



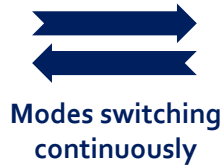
Key problems in Remote teaching

Synchronous Mode

– Live teaching

If teaching through video conferencing software only:

- Cannot review students' work
- Cannot manage students' learning progress



Asynchronous Mode

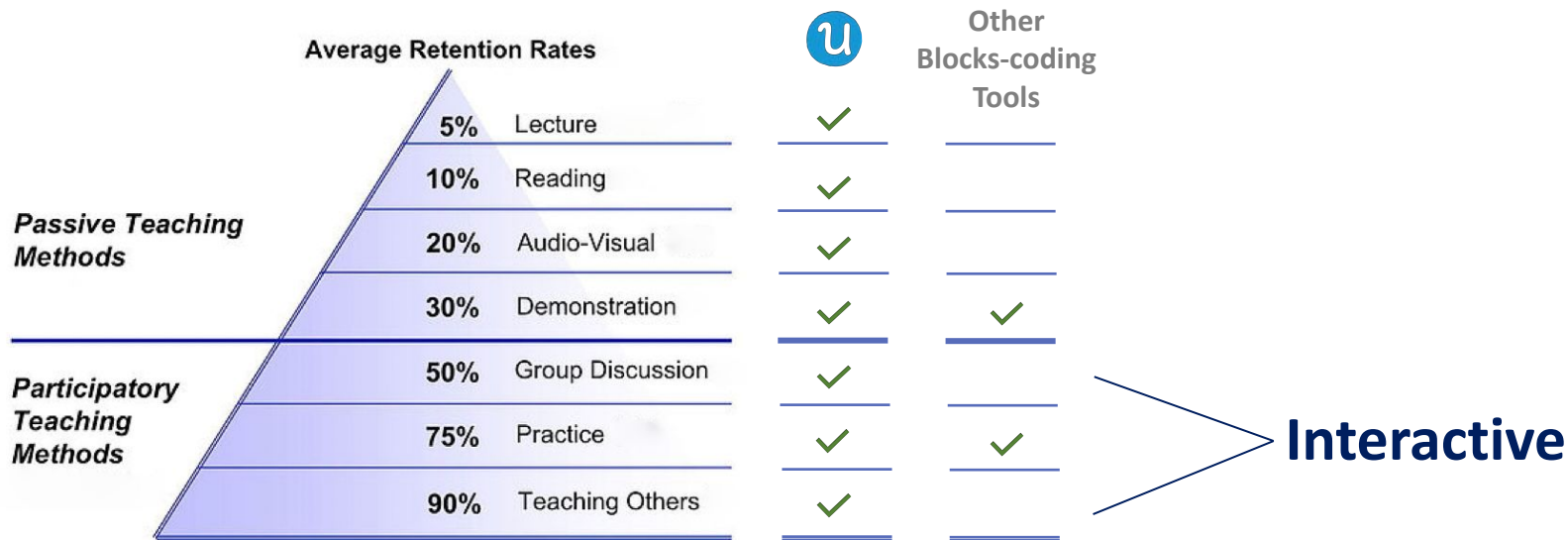
– Sharing teaching material (e.g. video), self-learning and evaluating via exercise

If teaching through learning management system only:

- Cannot learn task by task
- Cannot provide students with real-time feedback

Why Interactive Is Better?

The Learning Pyramid



*Adapted from National Training Laboratories. Bethel, Maine

Why Collaboration is better?

Numerous studies have revealed the benefits of Collaborative Learning.

Academic Benefits

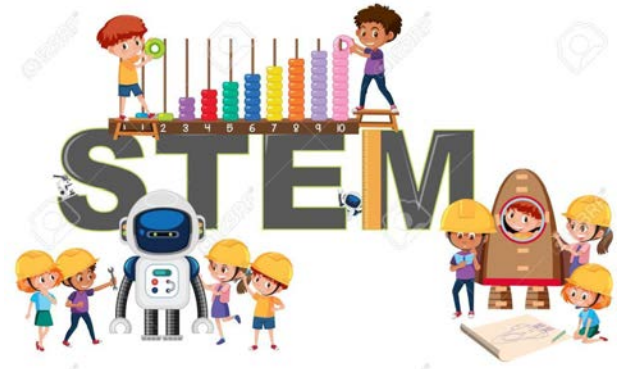
- Promotes **critical thinking** skills through analyzing groupmates' ideas
- Encourages **active involvement** of students in the learning process
- **Higher achievements** and greater **productivity**
- Trains students' **problem-solving skills**
- Helps **motivate students to learn** with the aid of groupmates

Psychological Benefits

- Student-centered instruction **increases students' self-esteem**
- Cooperation **reduces anxiety**

Social Benefits

- Develops a **social support system** for learners
- Builds **diversity understanding** among students and teachers
- Establishes a **positive atmosphere** for **modelling** and practicing **cooperation**



Why Real-time Update is better?

- **Facilitates student-teacher communication** by viewing students' instant update and progress of work
- **Achieve higher learning effectiveness and efficiency** by addressing students' questions and problems right when they occur
- **Aid teachers in adjusting their teaching** methodologies and pace by assessing students' work done on the spot
- **Promotes interactive learning** through observing and discussing classmates' work in class



Why Cloud-based solution is better?

- **Easy access** to projects at **home** and **school**
- **Increased collaboration** among students by sharing and viewing their work easily and securely across the cloud-based platform
- **Simple recovery** of data
- **Flipped classroom** – students able to prepare or pre-study the target learning objective at home before attending lessons



Why Smart Devices Creation is better?

- Allows students to turn **abstract codes** into physical control of a **tangible device**
- **Stronger sense of success and satisfaction** with the creation of an actual product
- Able to be **customized** according to students' needs and interest – gaming device, music device, robots, practical applications etc.



Cloud Platform as Virtual Classroom

Technology: Cloud & Real-time Communication

Teaching Materials: Ready-to-use / Upload

Editor: Modified Microsoft MakeCode

Hardware: micro:bit & Raspberry Pi

Virtual Classroom

- Choose/upload teaching materials
- Create a virtual classroom
- Quick assemble students to join

Real-Time Interactive Teaching & Learning

- Teachers-to-students interactive teaching
- Students-to-students collaborative learning

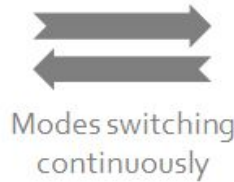


Remote Teaching

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Una Platform



Tech: Cloud & Real-time Communication

Teaching Content: Prepared by Una / Self-upload

Coding: Original & AI-enhanced Microsoft MakeCode

Apps: Micro:bit, Raspberry Pi & Web App Intelligent Devices



The **ONLY** solution embeds Microsoft MakeCode, listed on Azure Marketplace



Lower learning entry barriers

by applying AI, sensors and diff. technology with blocks coding



Improve teaching efficiency

by high-quality content & learning management features, e.g. AI quota



Enhance learning effectiveness

by monitoring students' learning progress in real time, incl. coding work

Other Features

- Task-by-task learning ☒
- Collaborative learning ☒

- Single Sign-On Login ☒
- Remote AI Lab ☒

- Cloud auto-save ☒
- Preload codes ☒

- Q&A Session ☒
- Sharing hardware in group ☒

- Shareable link ☒

...

Provide Two Types of AI Training through Una Platform

Type 1 - On-site/remote student training courses

We are **Microsoft Global Training Partner**, specialized in providing quality AI training to **Aged 8+** youngsters



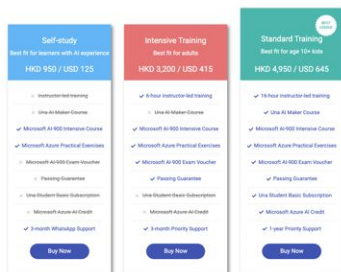
Step 1

Enrol in **FREE** online live trial class



Step 2

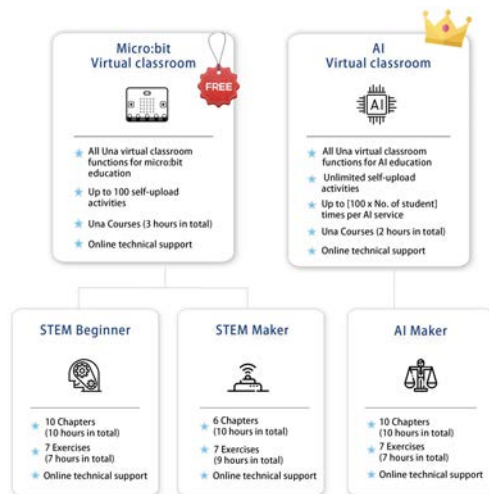
Enrol in **full course**



Micro:bit & AI trial classes detail can be found on our [website](#)!

Type 2 – Virtual Classroom and Courses (Annual Subscription)

Our **ALL-IN-ONE** solution combines teacher training, curriculum, pedagogy and tools, enabling teachers to catch up **quickly** in teaching Coding, STEM & AI



Step 1

Get **Forever FREE** accounts for **micro:bit virtual classroom** for whole school



Step 2

Subscribe

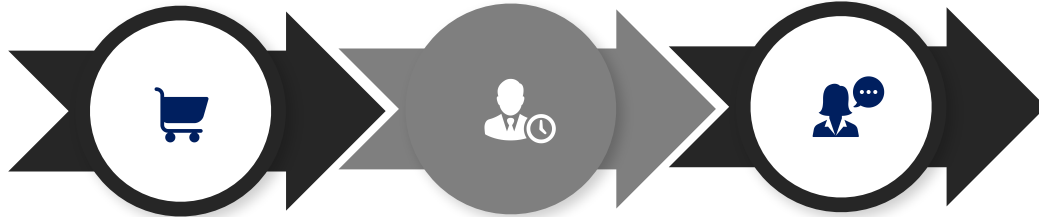
- Micro:bit courses
- AI virtual classroom & courses

More details can be found on our [website](#)!

How to use Una platform?



Microsoft in
Education Global
Training Partner



Subscribe Una

To Get

- Teacher accounts
- Student accounts
- Teaching materials

Create Virtual Classroom

By Selecting

- Teaching materials
- Students

Enjoy Interactive Teaching & Learning

On

- **Modified MakeCode** for AI Education
- **Original MakeCode** for micro:bit education

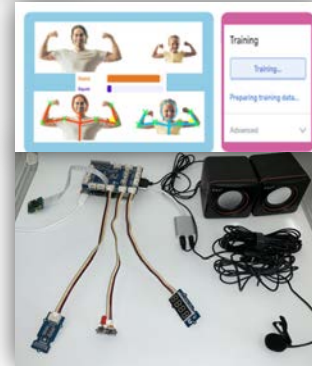
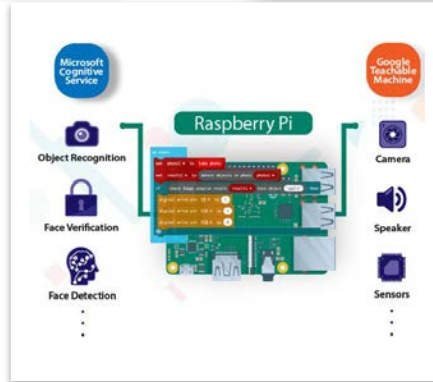
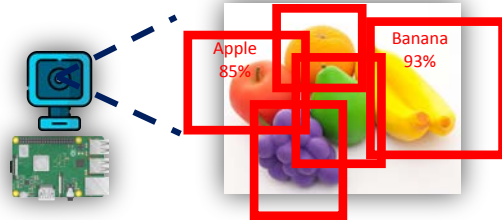
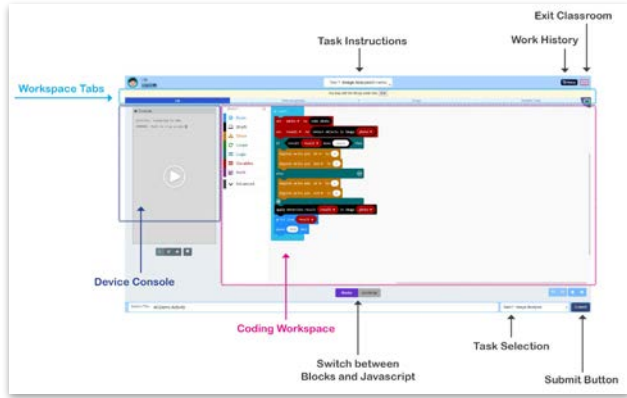
Virtual Classroom for AI Education



Microsoft in
Education Global
Training Partner



Modified MakeCode & Learning Management



Create Powerful AI Devices

Raspberry Pi, Webcam, Grove sensors, Microsoft Azure Cognitive Services, Google Teachable Machine



Easy-to-use Blocks Coding



IoT Devices Management

Assign school quota of API calls to individual students



Start from Low or no hardware cost

Share hardware in group or borrow from Remote AI Lab



Support Face-to-face or Remote Teaching

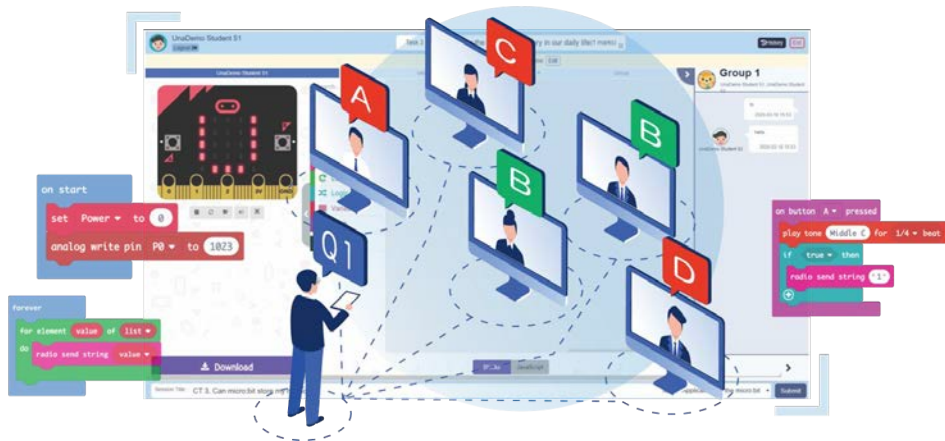
Virtual Classroom for micro:bit



Microsoft in
Education Global
Training Partner



Original MakeCode & Learning Management



Built-in
E-Books



Coding
Tasks



Problem
Solving
Challenges



Q&A
Evaluation

Teaching students to make micro:bit smart
devices



Virtual Classroom General Usages



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Education Global
Training Partner



Teacher's panel

One-click Assembly

- Avoid students mis-selecting classroom by mistake
- Speed up e-learning setup

Lock-step

- Progress control
- Encourage cooperation

Flexible grouping

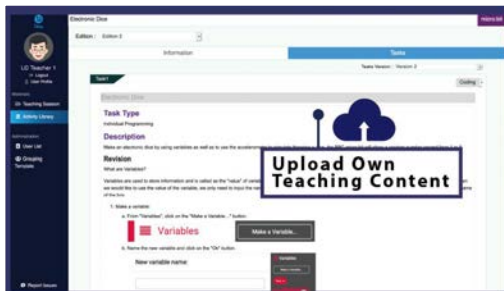
- Caters to individual learning diversity

Self-upload Content

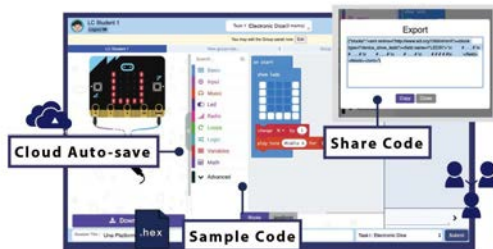
- Support customization by texts, images and videos
- Provide Easy-to-use interfaces

Real-time evaluation

- Give students instant feedback
- Support student in-class presentation & encourage creativity



Student's workspace



Cloud Auto-save

- Resume under failure
- Continue the working after class

Sample Code

- Speed up learning process by preloading sample program
- Make learning becomes easier by providing tips to students

Share Code

- Fun learning and students no long struggle alone under collaborative coding
- Extend working from previous projects

In-app Chat

- Encourage discussion
- Teachers can enable/disable anytime during lesson

Q&A Session

- Evaluate students understanding
- Collect students' feedbacks

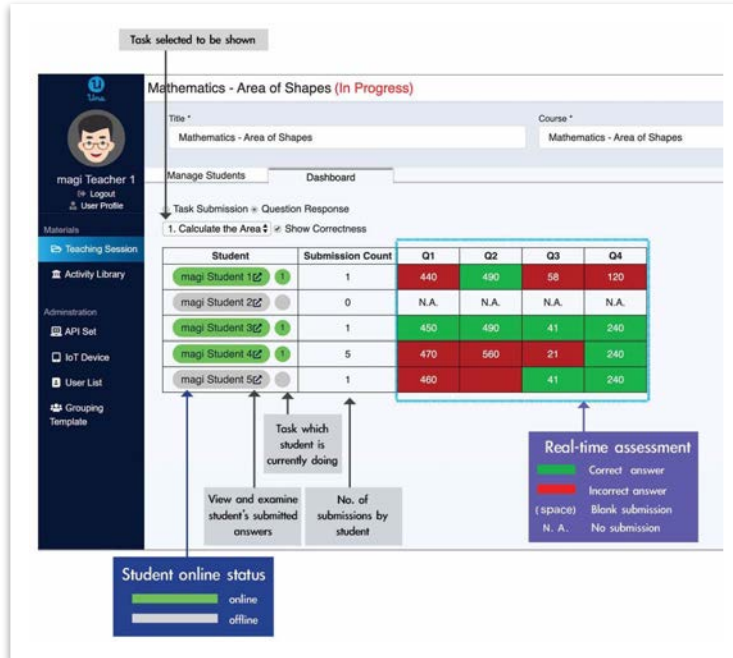
Real-time Dashboard



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Education Global
Training Partner



Real-time interactive technology empowers Adaptive Learning



Teacher's dashboard



Student's view



Individual student's learning performance evaluation



Auto-marking, real-time feedback and assign different tasks to different levels of students



Synchronous & Asynchronous teaching



Supervise students and take attendance

Una supports All Learning Modes



1. Face-to-face

- Teachers no longer need to walk around the classroom and debug students work, they can now easily find out class common mistakes through teachers' dashboard and give explanations.

2. Live remote

- Working with any online conferencing tool, Una real-time dashboard empowers teachers to evaluate in real-time whether students are online and their individual learning progress.

3. Self-study with pre-recorded video

- Teachers can upload their own materials (including video, images and text) and distribute the learning resources to students.

4. Exam assessment

- If any teacher starts a virtual classroom with exam mode, students cannot access any other virtual classrooms during the exam.

Comparison with other micro:bit coding editors



Microsoft in
Education Global
Training Partner



General Usage

Virtual Classroom

Install Hex
Programs
in physical
micro:bit

Extend
with
Sensors

Micro:bit
Emulator

Do Coding
without
Teacher

Real-time
Evaluation

Built-in
Teaching
Content

Classroom
Management

Group
Learning

Single
Sign-on
Login

Cloud
Auto-sav
e

Free

Una for
micro:bit



Microsoft
MakeCode



MIT
Scratch



Micro:bit
Classroom



Comparison with other AI education solutions



Support micro:bit



Easy-to-use and Powerful

High Extensibility

Virtual Classroom

Making AI applications

AI physical devices with online AI services

AI physical devices with AI training models

Low entry barrier

Support multiple sensors

Support multiple hardware controllers

Support multiple cloud services

Virtual Classroom
1) Face-to-Face / Remote
2) Groups Learning
3) Learning management

Free



Una for AI



Text-based programming solutions (e.g. Python, JavaScript)



Hardware-oriented solutions (e.g. Google AIY, Nvidia JetBot, DJI RoboMaster, Makeblock Halocode)



Software-oriented solutions (e.g. SenseTime Sensestudy, MakeBlock mBlock, Machine Learning for kids)



45

學習人工智能(AI) - 2019

資優教育組安排學生透過**遙距線上形式**學習人工智能(AI)這個炙手可熱的課題，包括：人工智能基礎、物件識辨及人臉檢測等，透過線上視像會議軟件，配合UNA平台，讓學生可以參與協作式互動學習，甚至使用遠端 Raspberry Pi 即時測試編程結果，為學生開啟了認識AI人工智能的知識大門。

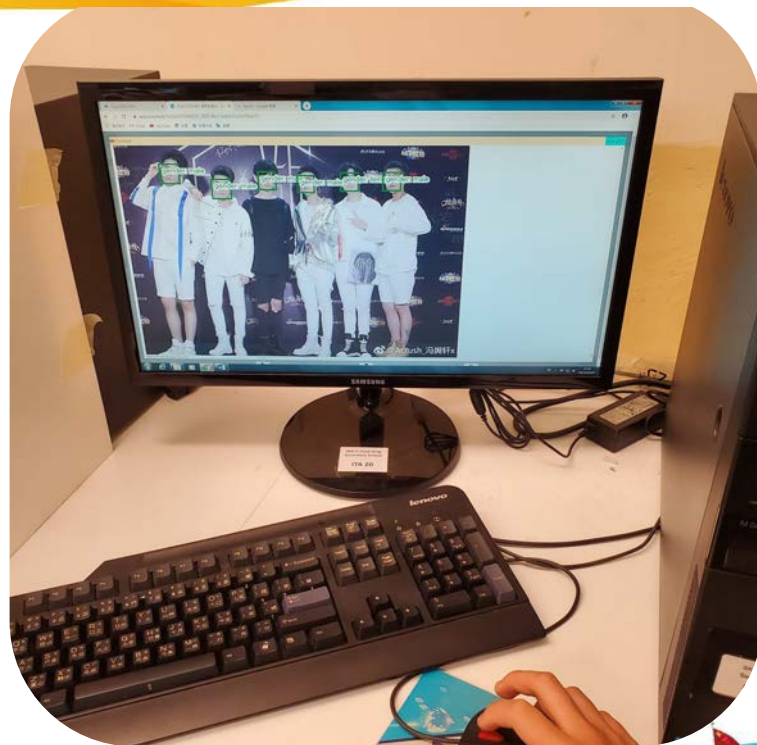
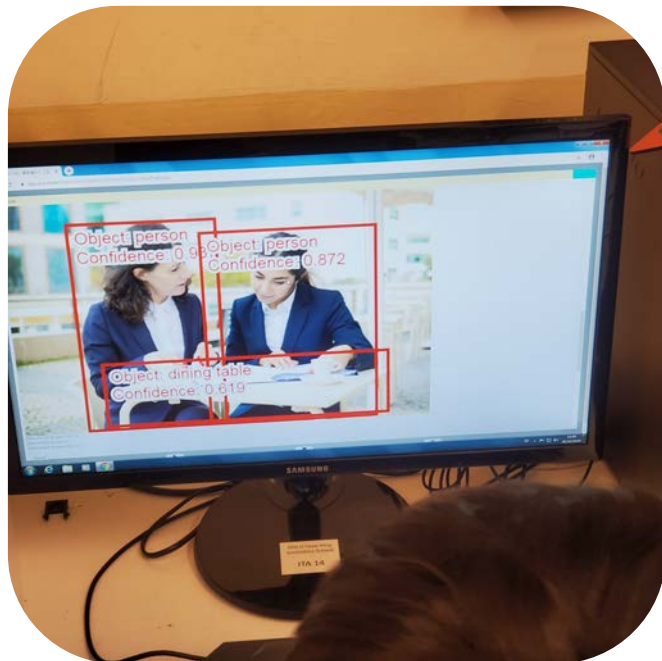
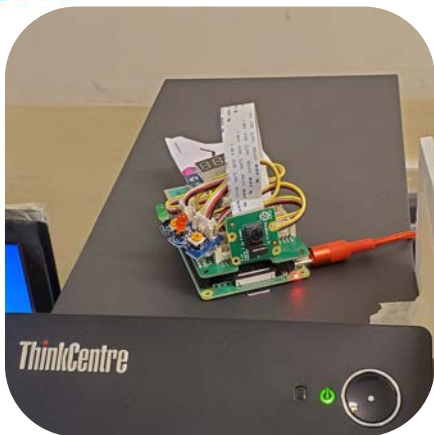
AI Maker (<https://youtu.be/80AZc65xz9Y>)



學習人工智能(AI) - 2020



學習人工智能(AI) - 2020



學習人工智能(AI) - 2020

2020 1028 AI2. 不能吃的蘋果 (進行中)

課程 AI2. 不能吃的蘋果

管理學生 管理裝置 管理配額 儀表板

1 查看效果及與人工智能準確性 - 顯示對照

Student 6	0	N.A.	N.A.	N.A.	N.A.
SKHLPHSS Student 7	0	N.A.	N.A.	N.A.	N.A.
SKHLPHSS Student 8	1	0.854	0.868	0.534	0.503
SKHLPHSS Student 9	1	0.854	0.868	object: "Fruit", confidence: 0.534, object: "Food", confidence: 0.936	object: "orange", confidence: 0.503, object: "Fruit", confidence: 0.738, object: "Food", confidence: 0.745
SKHLPHSS Student 10	0	N.A.	N.A.	N.A.	N.A.
SKHLPHSS Student 11	1	Apple:85.4%	Apple:86.8%	Fruit: 53.4%	orange:50.3%
SKHLPHSS Student 12	1	85.4%	86.8%	53.4%	50.3%



新常態 - 電子學習



- 電子學習平台
- 實時網上授課



Blended Learning
combining the best teaching methods



非面授課堂 → 網上學習

停課期間運用電子學習模式支援學生在家學習的參考原則

https://www.edb.gov.hk/attachment/tc/edu-system/primary-secondary/applicable-to-primary-secondary/it-in-edu/Support/Principles-on-E-Learning_C.pdf

在停課期間運用電子學習模式支援學生在家學習參考原則

停課期間，教育界和公眾人士對運用電子學習模式支援學生在家學習的若干誤解，以下作簡略解釋，提出一些原則和例子，供本地公營中、小學參考，並作適當規範。

迷思	原則/例子
1. 電子學習是停課在家學習的唯一方法。	學習模式多元，網上、網下的學習應以促進學生在家自主學習為重點，應切合學生需要和校情。 在家學習模式舉隅： - 列印課業文本及其他學習材料，郵寄給個別有需要的學生或由家長按需要回校提取，並輔以「陽光電話」或運用流動通訊程式與家長和學生溝通。 - 舉行網上家長日，教師與不同年級的家長分時段「會面」，以了解學生的學習和情感需要。

實時網上授課只是眾多電子學習策略之一

3. 依照平時課堂的時間表進行實時網上授課，以趕上教學進度。	不宜硬性規定各科依照平日時間表進行實時網上授課。學校要細心考慮每天安排多少節實時網上授課，哪些科目/課題適合，以及預留多少時間讓學生進行自學、閱讀及提供個別輔導/回饋。
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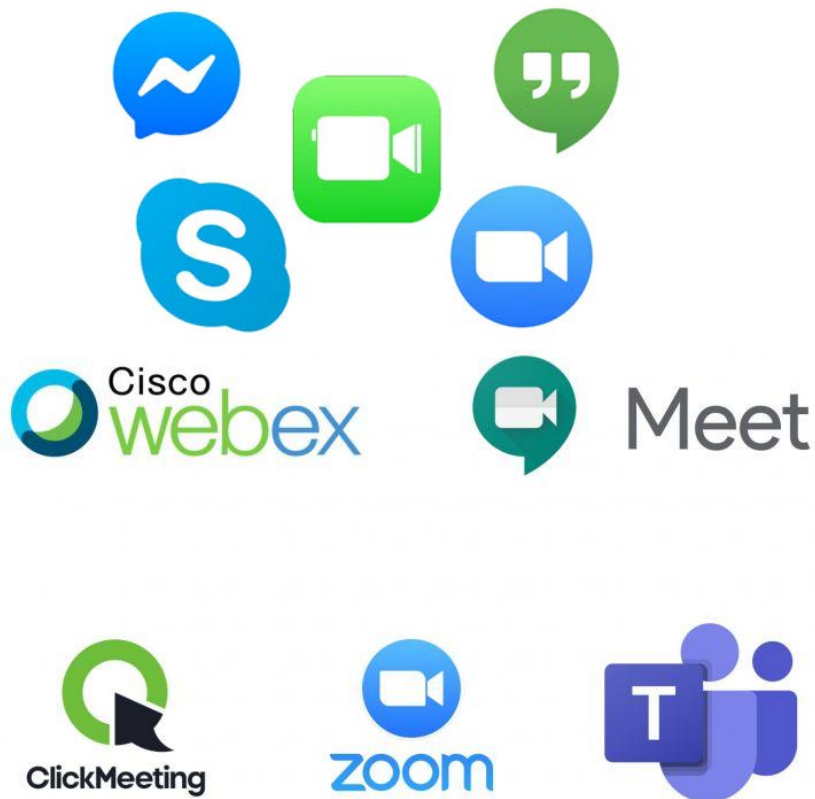
學習模式多元，網上、網下的學習應以促進學生在家自主學習為重點，應切合學生需要和校情。



Video Conference

線上資訊安全更重要

- ★ 教師及學生身份確認
(學校提供的 網上帳號)
- ★ 中央安排會議連結
- ★ 非課堂學生不應允許加入
- ★ 網上實時課堂的守則及禮儀



學生的網絡帳號身份 (混合式學習必要)

登入帳戶有助確保學生的網絡帳號身份，讓教師在進行學習過程及評估上更易識辨學生的身份。

互聯網電郵地址

G Suite for Education (Google)

學生証編號@lfh.edu.hk

O365 (Microsoft)

學生編號@ms.lfh.edu.hk

學生數碼身份確認 -
避免混入冒充
(資訊安全)



〈有關「建立雲端學習帳戶」事宜〉

敬啟者：

為讓本校學生學習使用現今社會人與人之間主要的科技工具—數碼裝置，並掌握學習階段及未來工作必備的軟件技巧，包括雲端文書處理軟件、雲端試算表、雲端程式編寫等，不同年級之學生均建議使用雲端帳戶作為學習工具，即每位學生將會擁有個人的 Google 帳戶及微軟 Office365 帳戶。為減省家長之工作及成本，本校已經為 貴子弟建立一個教育版的 Google 帳戶 (G Suite for Education) 及一個 Office365 教育版帳戶，供 貴子弟在學習時使用。

請各位家長先瀏覽以下相關使用的使用條款：

- Google 帳戶 https://gsuite.google.com/terms/education_terms.html
- Microsoft 帳戶 <https://products.office.com/zh-hk/student/office-in-education>

雲端可以使用本校為 貴子弟建立之雲端學習帳戶，如有查詢，歡迎致電本校陳俊銘老師聯絡(電話：2560-5678)。

此致

貴家長

聖公會李福慶中學校長

張翠儀

謹啟

二零一九年九月二日

遙距課堂教師及學生的需要

校情不同 - 使用指引 (教師 及 家長/學生)

The collage consists of 20 numbered slides from a Google Meet user guide. The slides are arranged in a grid-like fashion, with some overlapping. The slides cover various topics related to Google Meet, including: 1. Google Meet Staff Guidelines, 2. Google Meet for Educators, 3. Google Meet - Anonymous, 4. Google Meet - Anonymous, 5. Google Meet - Anonymous, 6. Google Meet - Anonymous, 7. Google Meet - Anonymous, 8. Google Meet - Anonymous, 9. Google Meet - Anonymous, 10. Google Meet - Anonymous, 11. Google Meet - Anonymous, 12. Google Meet - Anonymous, 13. Google Meet - Anonymous, 14. Google Meet - Anonymous, 15. Google Meet - Anonymous, 16. Google Meet - Anonymous, 17. Google Meet - Anonymous, 18. Google Meet - Anonymous, 19. Google Meet - Anonymous, 20. Google Meet - Anonymous.



遙距課堂教師及學生的需要

學生守則及禮儀



聖公會李福鳴中學
SKH LI FOOK HING
SECONDARY SCHOOL

網上實時課堂

學生守則及禮儀

網絡帳號身份

登入帳戶確保學生的網絡帳號身份

互聯網電郵地址帳戶 (Google)

使用者名稱: 學生証編號@lfh.edu.hk

e.g. 20209999@

網上實時課堂 學生使用守則

- 同學在網上課堂期間, 應該保持攝影鏡頭(webcam)開啟並能夠正面拍攝同學容貌
- 請同學安排一個合適的位置放置電腦/智能電話、教科書、筆記、紙張、文具及其他學習材料。
- 請同學注意合適的衣著和儀容

網上實時課堂 學生使用守則

- 為尊重個人私隱, 上課期間, 切勿進行拍照、錄音或錄影
- 不可以任何形式分享其他參與者的螢幕
- 於網上實時課堂期間, 學生應遵守課堂常規上課。

網上實時課堂 學生使用守則

1. 科任老師會於 課堂**5分鐘前**開啟網上會議課堂
2. 網上課堂等同一般常規課堂, 請同學注意言行, 認真學習。
3. 課堂進行期間, 請將你的麥克風設為「靜音」(按左下角的靜音按鈕), 以免影響老師講學

網上實時課堂 學生使用守則

4. 有序地及有禮地進行對話, 如要發言應該:
 - 解除「靜音」說出自己姓名
 - 獲老師准許
 - 同學發言 / 分享其電腦的檔案



Video Conference by Google Meet

老師訊息 - Google Chrome

不安全 | lfh.edu.hk/~school/cgi-bin/t/readtdetail.cgi?name=lfh-ctm&logno=56425&lfh

發訊者：Lau Tuen Hung

日期：16-07-2020, 19:17

主題：暑期學堂 (視像形式)之上線LINK及點名安排

附升S5〈暑期安排事宜〉- 暑期學堂 Google Meet LINK及時間表

附升S6〈暑期安排事宜〉- 暑期學堂Google Meet LINK及時間表

(3) 各會議代碼如下：

SUBJECT	會議代碼	LINK
Chin	5A	5a-chin https://g.co/meet/5a-chin
	5B	5b-chin https://g.co/meet/5b-chin
	5C	5c-chin https://g.co/meet/5c-chin
Eng	5A	5a-eng https://g.co/meet/5a-eng
	5B	5b-eng https://g.co/meet/5b-eng
	5C	5c-eng https://g.co/meet/5c-eng
MATH	math -5ab1	5ab1-math https://g.co/meet/5ab1-math
	math -5ab2	5ab2-math https://g.co/meet/5ab2-math
	math -5ab3	5ab3-math https://g.co/meet/5ab3-math
	5C	5c-math https://g.co/meet/5c-math
LS	5A	5a-ls https://g.co/meet/5a-ls
	5B	5b-ls https://g.co/meet/5b-ls
	5C	5c-ls https://g.co/meet/5c-ls

SUBJECT	會議代碼	LINK
M2	s5-m2	https://g.co/meet/s5-m2
X1	ECON	s5-econ https://g.co/meet/s5-econ
	BIO	s5-bio https://g.co/meet/s5-bio
	PHY	s5-phy https://g.co/meet/s5-phy
	VA	s5-va https://g.co/meet/s5-va
	CHIST	s5-chist https://g.co/meet/s5-chist
X2	CHEM	s5-chem https://g.co/meet/s5-chem
	HIST	s5-hist https://g.co/meet/s5-hist
	GEOG	s5-geog https://g.co/meet/s5-geog
	BAFS	s5-bafs https://g.co/meet/s5-bafs
	ICT	s5-ict https://g.co/meet/s5-ict

16184a_假期通告(升中六) 1/3

聖公會李福慶中學
2019-2020 年度 家長通告

檔案編號：19113c

暑期學堂
升中六級

7月校

時間/日期	20/7(一)	21/7(二)	22/7(三)	23/7(四)	24/7(五)
09:00-09:55	通修科 X2 (LTH, YLY, LHK, MWC, PTW)	英文 (HSH -CCF -YYS)	通修 (SPS -HLK -TLH)	英文 (HSH -CCF -YYS)	通修科 X2 (LTH, YLY, LHK, MWC, PTW)
10:00-10:55	數學 (YCC,CYL,KYM, LPS)	數學 (YCC,CYL,KYM, LPS)	通修科 X1 (YKY, TKN, HSH, LSK, CCC)	中文 (LYT -CTH -FTY)	通修科 X1 (YKY, TKN, HSH, LSK, CCC)
11:00-11:55	中文 (LYT -CTH -FTY)	中文 (LYT -CTH -FTY)	英文 (HSH -CCF -YYS)	通修 (SPS -HLK -TLH)	數學 (YCC,CYL,KYM, LPS)
12:00-12:55				通修 -IES	M2(YCC)

<https://g.co/meet/name>

g.co/meet/1A-Class

實時網上教學的規劃

網上實時課堂 時間總表 (連會議代碼及連結)



校園資訊
LFH Information
SKO LI FOOK HING
SECONDARY SCHOOL

— 學生訊息

[2020.05.27 – 中五升中六級暑期學堂時間表](#)

[2020.05.27 – 中四升中五級暑期學堂時間表](#)

[2020.05.27 – 中一及中二級5月27日起網上實時課堂時間表](#)

[2020.04.17 – 中一至中五級4月20日起網上實時課堂時間表](#)

[2020.03.30 – 中一至中五級4月份停課期間網上學習安排](#)

[2020.03.13 – 中一至中五級停課期間網上家課及學習安排 \(第四及第五階段: 16/3 – 8/4\)](#)

[2020.03.02 – 中一至中五級停課期間網上家課及學習安排 \(第三階段: 2/3–13/3\)](#)

[2020.02.17 – 中一至中五級停課期間網上家課及學習安排 \(第二階段: 17/2–28/2\)](#)

[2020.02.17 – 中六級停課期間網上家課及學習安排 \(第二階段: 17/2–28/2\)](#)

[2020.02.03 – 中一至中六級停課期間網上家課及學習安排 \(第一階段: 3/2–16/2\)](#)

https://www.lfh.edu.hk/campus_information/readallmessages2019.html



善用科技處理新生家長日及開學日



聖公會李福慶中學

SKH LI FOOK HING SECONDARY SCHOOL



關閉 CLOSE

學生與家長注意事項

致各級家長及學生：

有關開學安排請參閱以下連結：http://www.lfh.edu.hk/campus_information/1920/20002.pdf

二零二零年八月二十六日

聖公會李福慶中學 啟

8月份暑期學堂

致各中五、中六級家長及學生：

溫馨提示：中五及中六學生須於8月24(一)、25(二)、27(四)及28(五)日，以視像形式(Google Meet)出席暑期學堂，詳情可參閱以下連結：

中五級：http://www.lfh.edu.hk/campus_information/1920/19113b_1.pdf

中六級：http://www.lfh.edu.hk/campus_information/1920/19113c_1.pdf

二零二零年八月二十一日

聖公會李福慶中學 啟

中一新生家長及學生須知

致各中一家長及學生：

1. 中一家長日及中一新生開學準備日

本校原定於25/8(二)舉行之「中一家長日」及27-28/8(四及五)舉行之「中一新生開學準備日」活動，將改於8月28日透過視像形式進行：

上午10:00-11:00 家長收看有關中一新生注意事項 (Google Meet)

<https://g.co/meet/slparentsday>

(歡迎學生一同收看)

上午11:00-12:00 班主任與學生面談 (Google Meet)

1A: <https://g.co/meet/1a-class>

1B: <https://g.co/meet/1b-class>

1C: <https://g.co/meet/1c-class>

活動連結已透過家校應用程式 GRWTH 向各位家長發放。

2. 領取物資及安裝 GRWTH 程式

家長可於8月25至27日辦公時間(上午9:30-下午4:00)到學校領取學生物資，包括：學



校園活動

家校合作

校友園地

「開學日」及27-28/8(四及五)舉行之活動，將改於8月28日透過視像形式進行。

一新生注意事項 (Google Meet)
一透過家校應用程式 GRWTH

下午9:30-下午4:00到學校領取
時間表、校曆表、校簿及
如有需要，家長亦可由職員協

學生分班名單：

若未能連接互聯網，
辦公時間致電回校電話：
2611 2611

會」

守家中，心靈困乏，為此，本
月16日和7月21日舉行了「網

School Address

Tsui Wan Estate, Tsui Wan Street,
Chai Wan, HK

香港柴灣翠灣街翠灣邨

電話: (852) 2560 5678

傳真: (852) 2886 5730

MAP 地圖



Teacher Information System

Information Center
訊息中心

Student Information System

LFH Mail
電子郵箱

Intranet
內聯互動

Library
智能圖書館

e悅讀學校計劃

Online Question Bank

Useful Links

Event Calendar

活動日誌

Notice

通告



善用科技處理新生家長日及開學日



VIDEO CONFERENCE



VIDEO CONFERENCE



VIDEO CONFERENCE



VIDEO CONFERENCE



VIDEO CONFERENCE



Google Meet



HOW TO LIVE
STREAM WITH
GOOGLE MEET

LIVE ((•))

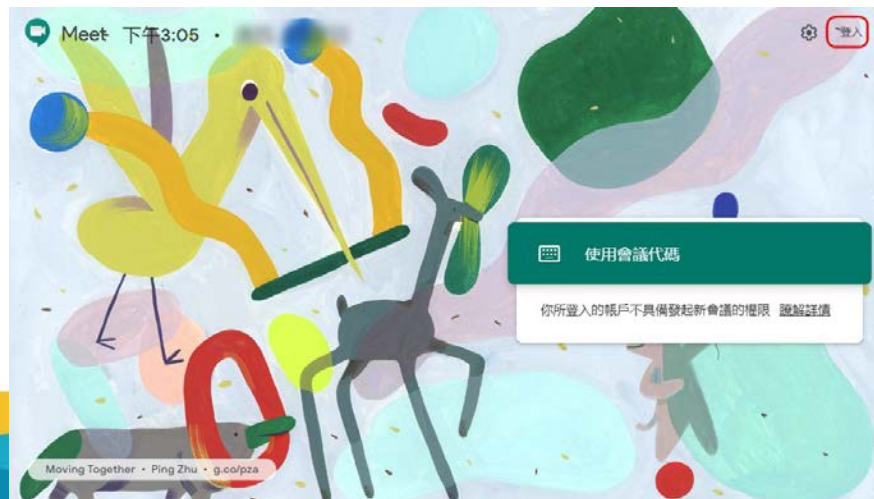


Google Meet



Google Meet (Desktop)

- 支援跨平台 Windows、MAC OSX、Android及iOS系統
 - No client software is needed
 - go to: <https://meet.google.com>
 - login your **@abc.edu.hk** G Suite for Education account





實時互動人工智能教育平台

Una 平台提供一站式方案，結合教師培訓、課程、教學法及工具於一身，令教師能夠輕易上手，並有效地教授中小學生人工智能 (AI)

立即預約課程簡介和平台實時演示

立即獲取免費帳戶



製作強大的 AI 應用程式和智能裝置



實時互動虛擬課室



簡易編程



完整學習階梯



透過雲端和實時技術，監察學生個人學習進度，教師可提供即時回饋予學生，切合面授課、遙距課和課後教學需要



完整學習階梯

四大步驟從零開始學習製作 AI 裝置及考取 Microsoft AI 證書



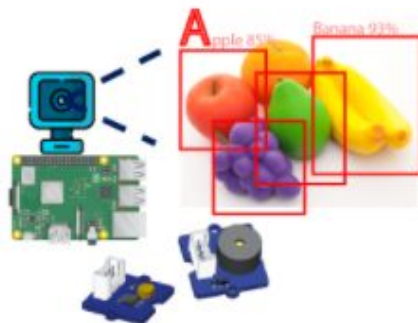
1. STEM Beginner

學生以有趣的故事和STEM方式引導學習，並用積木式編程學習基礎知識及概念



2. STEM Maker

學生以智慧城市為題，學習高階編程技巧、電子及科學知識



3. AI Maker

學生學習 AI 概念、限制和責任，透過應用不同的 AI 技術及訓練 AI 模型，應用 Microsoft Azure 認知服務及 Google Teachable Machine



4. AI-900

學生以精讀方式學習 AI 理論，完成模擬考試和預備考取 AI-900 證書，附帶 Microsoft Azure 實作練習

輸入 una.study 及選擇登入Una



<https://www.una.study/zh-hant/>



應用程式



講座及工作坊講義 (...)



× Menu

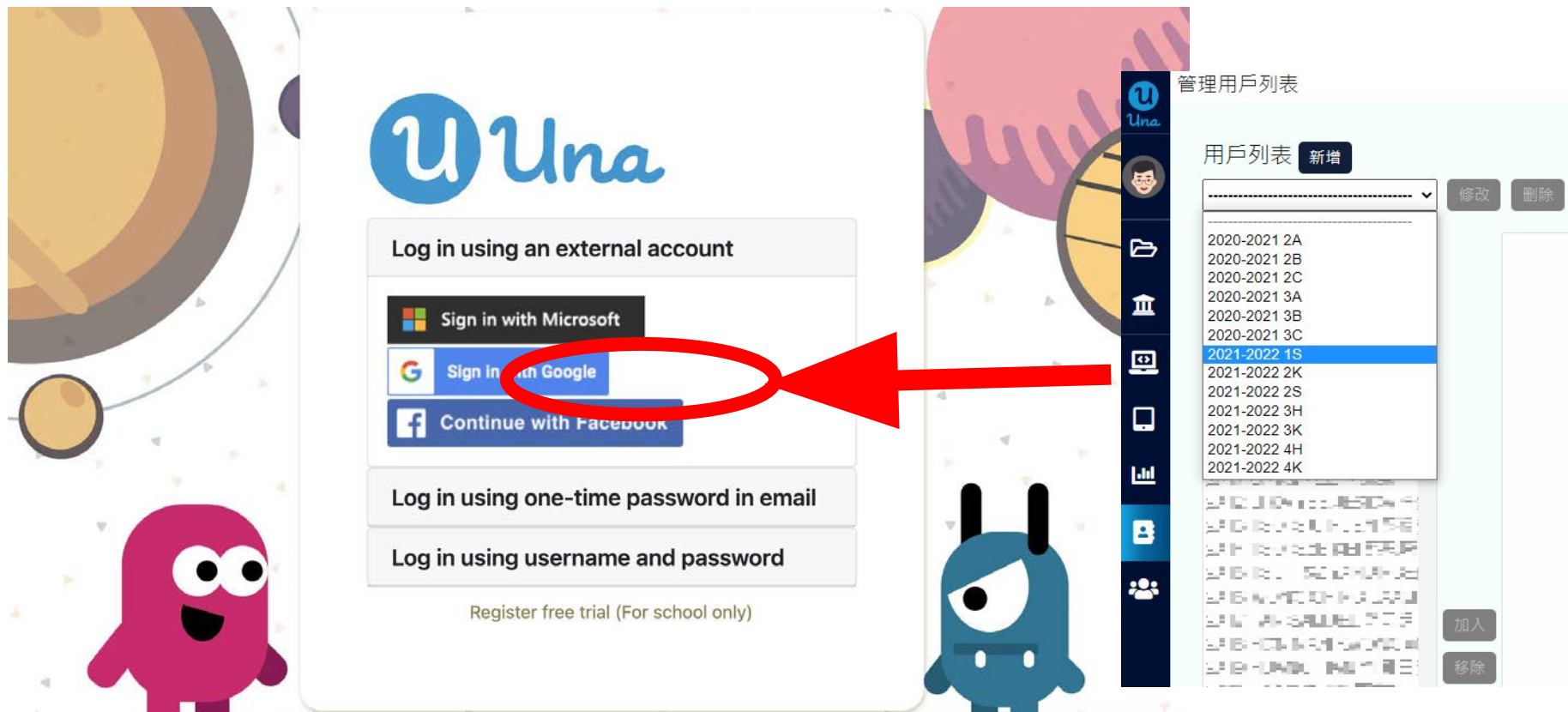
登入Una

學校專區



同時留在Google Meet 課室

按入 Sign in with **Google** (XXXXXXXXXX@lfh.edu.hk)





SKHLFHSS

Student 1

學校: 聖公會李福慶中學

堂課

練習

登出

虛擬教室

▼ 進行中

標題	類型	狀態 ^{↑↓}	創建時間
Trial Class#2	堂課	進行中	2021-02-23 11:50
STEM #1	堂課	新虛擬教室	2021-02-23 12:18

按標題

返回

課堂標題

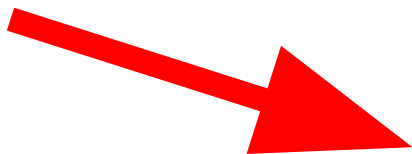
STEM #1

課堂簡介

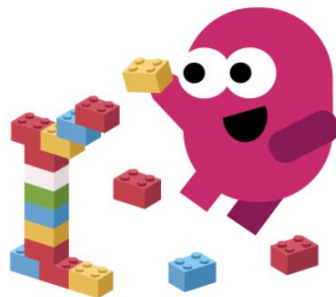
任務數量

7 任務

等老師批准進入



請稍等...
課堂即將開始。





問題 1

(0分)

以下哪一個是軟

答案

☐

螢幕

☐

BBC mic

☐

Raspber

☐

Microsof

問題 2

考考你



課程開始前，試挑戰一下，回答以下問題。

注意1：當我們填寫答案後，需按下右下方的「提交」按鈕，然後按「確定」，系統會紀錄我們提交的答案，（若Q&A的問題類型設定為自動批改，系統會顯示答案是否正確。）



提交答案

細閱指示





登出

回答所有問題

顯示 數字

0

如果 true 那麼



答案



「重覆無限次」

「 $0 = 0$ 」

「顯示 數字 (0) 」



「如果 ... 那麼 ...」

完成按下「提交」



登出

顯示 數字

0

如果 true 那麼

你確定要提交嗎？

確定

取消





E4 - 智能裝置 ▾



E5 - 智能藥盒 ▾



STEM Beginner ▾



Intelligent Kiosk ▾



STEM Maker ▾



AI Maker ▲

#	標題	已訂閱	標籤	最後修改	
1	AI1. 愛躲藏的人工智能	✓	computer magi	2020-08-31 16:17	聆 聽
2	AI2. 不能吃的蘋果	✓	computer magi	2020-10-14 10:44	聆 聽
3	AI3. 是男或是女	✓	computer magi	2020-08-31 16:37	聆 聽
4	AI4. 笑中有淚	✓	computer magi	2020-08-31 08:41	聆 聽
5	AI5. 不能偽造的鎖匙	✓	computer magi	2020-08-31 16:50	聆 聽
6	AI6. 挑戰JSON	✓	computer magi	2020-09-01 04:14	聆 聽
7	AI7. 瀕危動物圖鑑	✓	computer magi	2020-08-31 17:54	聆 聽
8	AI8. 姿勢要正確	✓	computer magi	2020-08-31 09:00	聆 聽
9	AI9. 智能回收模型	✓	computer magi	2020-08-24 11:31	聆 聽
10	AI10. 高準智能回收	✓	computer magi	2020-08-31 16:53	聆 聽

AI1. 愛躲藏的人工智能

AI App for Raspberry Pi

創建時間: 2020-04-20 13:52

版本: 版本12

修改

資訊

任務

一般

版本: 版本5

標題 *

AI1. 愛躲藏的人工智能

課程簡介

探索日常生活中哪裡用了人工智能，並學分析。



選擇圖像

AI1. 愛躲藏的人工智能

AI App for Raspberry Pi

創建時間: 2020-04-20 13:52

版本: 版本12

修改

資訊

任務

任務 版本: 版本13

修改

任務1

問答

考考你

課程開始前，試試挑戰一下，回答以下問題。

問題 1 分數 0

以下哪一句最能描述人工智能？

答案

mc

- ☒ 一種利用機器運算模擬人類認知能力的技術
- ☐ 一種無目的地模擬人類認知能力的技術
- ☐ 一種重複動作的技術
- ☐ 一種融合人和工業的能力



登出

答案

☐ 「重覆無限次」☐ 「0 = 0」☐ 「顯示 數字 (0) 」☒ 「如果 ... 那麼 ...」

隨次序選擇任務

✓ 任務 1: 考考你

任務 2: 編寫第一個程式「Hello, World !」

任務 3: 修改過往的程式「Hi, World !」

任務 4: 合作編程「A & B」

任務 5: 測試

任務 6: (挑戰) 什麼是「重複無窮」? 開始自創程

任務 7: 課程評估

任務1: 考考你

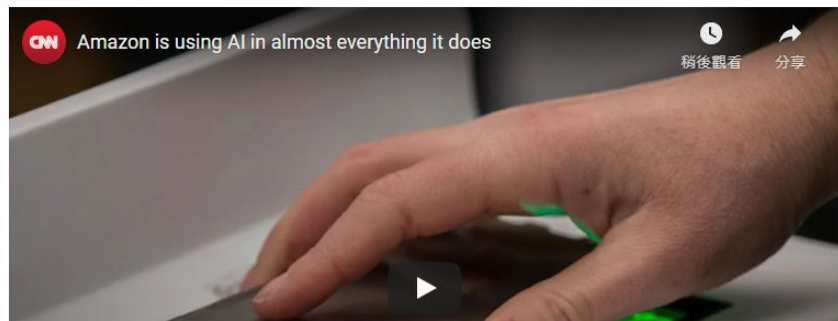
提交

日常生活中的人工智能

在現今社會，創新的科技為我們日常生活帶來很多新產品，減輕我們的工作量，方便我們。從以下影片和A-D的情景中，你能說出有哪些地方能應用人工智能？



情景A



自由創作AI程式和學習理解JSON

活動（一）

老師可以拍攝物件或在圖片庫選取，同學們透過老師的console閱讀JSON的資訊猜測老師拍攝了什麼物件。

活動（二）

（適用於實體課堂）以小組方式進行問與答，三位組員先閉上眼睛，組員A拍攝物件，然後讓三位組員透過JSON的資訊猜測組員A拍攝了什麼物件。之後交換角色。

活動（三）

各組員在個人工作界面中，任意選擇圖片庫一張圖片（不可跟其他組員相同），在編程工作界面中，以註解（Comment）方式寫下JSON顯示的各層資訊、相似率、物件類型等資料。

圖片庫：

1. <https://www.magicubedu.com/una/AI1/samples/3.jpg>
2. <https://www.magicubedu.com/una/AI1/samples/4.jpg>
3. <https://www.magicubedu.com/una/AI1/samples/5.jpg>
4. <https://www.magicubedu.com/una/AI1/samples/6.jpg>
5. <https://www.magicubedu.com/una/AI1/samples/7.jpg>
6. <https://www.magicubedu.com/una/AI1/samples/8.jpg>
7. <https://www.magicubedu.com/una/AI1/samples/9.jpg>
8. <https://www.magicubedu.com/una/AI1/samples/10.jpg>

小提示：如何加入註解

1. 將指標指著你所想加入註解的地方，例如任何積木或空白的位置，按下滑鼠右鍵，再按「Add Comment」，再輸入文字以加入註解，讓其他人都能看到你的註解。

完成後，需按下右下角的「提交」按鈕提交答案。

AI Maker (WebApp) ^

#	標題	已訂閱
1	AI1. 愛躲藏的人工智能 AI (Web App)	✓
2	AI2. 不能吃的蘋果 (Web App)	✓
3	AI3. 是男或是女 (Web App)	✓
4	AI4. 笑中有淚 (Web App)	✓
5	AI5. 不能偽造的鎖匙 (Web App)	✓
6	AI6. 挑戰JSON (Web App)	✓
7	AI7. 瀕危動物圖鑑 (Web App)	✓
8	AI8. 姿勢要正確 AI (Web App)	✓
9	AI9. 智能回收模型 (Web App)	✓
10	AI10. 高準智能回收 (Web App)	✓

當啟動時



```

1 let mainLayout = ScreenItem.createLayout()
2 let mainScreen = Screen.create("Main", mainLayout)
3 let imageModel = TeachableMachine.loadImageModel("")
4 let fileInput = Control.createFileInput()
5 mainLayout.add(fileInput)
6 let detectButton = Control.createButton("Show Result")
7 mainLayout.add(detectButton)
8 let bottomLayout = ScreenItem.createLayout()
9 bottomLayout.setAlignItems(CssAlignment.Center)
10 mainLayout.add(bottomLayout)
11 let resultLayout = ScreenItem.createLayout()
12 Styling.setMaxWidth(resultLayout, CssValues.createLengthPercentage(100))
13 Styling.setTextAlign(resultLayout, CssTextAlignment.Center)
14 bottomLayout.add(resultLayout)
15 detectButton.onClick(function () {
16     resultLayout.clear()
17     let photo = fileInput.getFiles()[0].toImage()
18 })
19

```



積木



JavaScript



應用程式介面列表

名稱	開始時間	完結時間	持有學校	合計配額	餘下配額	最終更新時間
Microsoft Cognitive Services - Vision	2020-04-21	2020-07-22	聖公會李福慶中學	1000	883	2020-04-22
Microsoft Cognitive Services - Face	2020-04-21	2020-07-22	聖公會李福慶中學	1000	927	2020-04-22
Microsoft Cognitive Services - Face	2020-10-16	2020-12-16	聖公會李福慶中學	750	562	2020-11-19
Microsoft Cognitive Services - Vision	2020-10-16	2020-12-16	聖公會李福慶中學	750	565	2020-11-19
Microsoft Cognitive Services - Face	2021-02-08	2022-02-08	聖公會李福慶中學	16500	16500	2021-01-29
Microsoft Cognitive Services - Vision	2021-02-08	2022-02-08	聖公會李福慶中學	16500	16500	2021-01-29
Microsoft Cognitive Services - Vision	2021-11-24	2022-02-01	聖公會李福慶中學	1500	1500	2021-11-24
Microsoft Cognitive Services - Face	2021-11-24	2022-02-01	聖公會李福慶中學	1500	1500	2021-11-24

網絡應用程式管理

網絡應用程式總數

0

Microsoft Cognitive Services - Vision

19448

Microsoft Cognitive Services - Face

19489

Why choose Una?

“T E A” Uniqueness



TechEd

- ✓ **PhD** computer scientist and engineer led training team, **trusted by Microsoft, Government and schools**

EdTech

Exclusive & self-developed Una Platform:

- ✓
 - easy to use
 - enhances interaction
 - supports hybrid & blended learning

Accreditation

- ✓ **Microsoft Global Training Partner**, and more



Trainers in the Market

- ✗
 - Lack of professional qualification in both technology & education
 - Neglect teacher training

VS

- ✗
 - Teach concept by PowerPoint only
 - Lack of tools to apply AI technology
 - Lack of hands-on exercises

- ✗ Lack of accreditation, only Microsoft authorized partner is legal to use Microsoft Content

Testimonial



“

Una can enhance students' cooperation skills while keep the fun part in learning coding!

John Tsang

Founder of **Esperanza** and
Former Financial Secretary of the HKSAR Government

“

It's a breath of share to find a product that allows students to learn AI continuously at home. It is surprising that students can even test the coding result through a Raspberry Pi remotely. I appreciate that the lessons provide clear learning objectives and comprehensive design of assessments so that we can review what students have learned. Like!

“

Una did a great job at constructing the courses' structure. Even the teaching materials are considered challenging compared with the student's level, students can still keep up with the learning progress, grasp the coding logic of Python and the fundamental AI concepts under Una tutor's instructions.

“

Una's course is packed with rich and challenging content for students to understand the fundamental level of AI concepts. Thanks for the heartfelt teaching of Una's professional tutors!



Jimmy Chan

Vice Chairman of Council of the **Hong Kong Association for Computer Education (HKACE)** and Head of IT committee of **SKH Li Fook Hing Secondary School**

Tse Sir

Science & Physics teacher from **St. Paul's Co-educational College**

Mr. Lai

Parents



“

It is easy and convenient to upload my own teaching content onto Una. Una helps students to study in groups that cater to individual learning diversity.

Eric Leung

Vice-Chairman of **Association of I.T. Leaders in Education (AiTLE)** and Head of Technology Education in **Munsang College (Hong Kong Island)**

“

...Una's lessons are well-paced and offer different levels of difficulties for students with different coding abilities. This platform provides great freedom for students to demonstrate their creativity and programming ability on the Challenge page. All students' works are collected onto the same platform, which becomes very convenient for teachers to manage and follow up on their work.

Pauline Ip

STEM & IT in Education Coordinator from **Diocesan Boys' School Primary Division**



“

Una simplifies technical operations, and gives students more cooperation opportunities, also allowing them to take turns in pair programming.

William Luk

IT Panel Head and Head of STEAM Education of **HKBUAS Wong Kam Fai Secondary and Primary School (Primary Division)**

“

With the clear instructions and flexible pace of learning through Una Platform, I can understand how to code by using micro:bit. I like this course so much, especially the challenging questions at the end of the course.

Students

Diocesan Boys' School Primary Division

Achievements



300+
Schools



25,000+
Students



98%
Pass Rate

(First Batch of AI-900 students)



Una hosted "Tech For Future - Innovation Training Camp", co-hosted with **HKU Computer Science, HKACE, Microsoft & HKSTP**
*20 secondary schools participated in 2021



Innovative technology awards, e.g. "OGCIO - HK ICT awards 2019 ICT Start Up Award (Social Impact Gold award)"



Educational technology awards, e.g. **Esperanza** - Reimagine Education Challenge (First Runner-up)



AI and SI Alliance with SenseTime, **NGO alliance** (HKCSS), University (CityU Apps Lab)



AI x Aviation Lab with **AeroSim**



Professional **Microsoft** certificate training



Teacher Training (co-hosted with **HK Education Bureau / OGCIO / HKACE / AiTLE**)



Serving the community - Training in **Youth Centers**



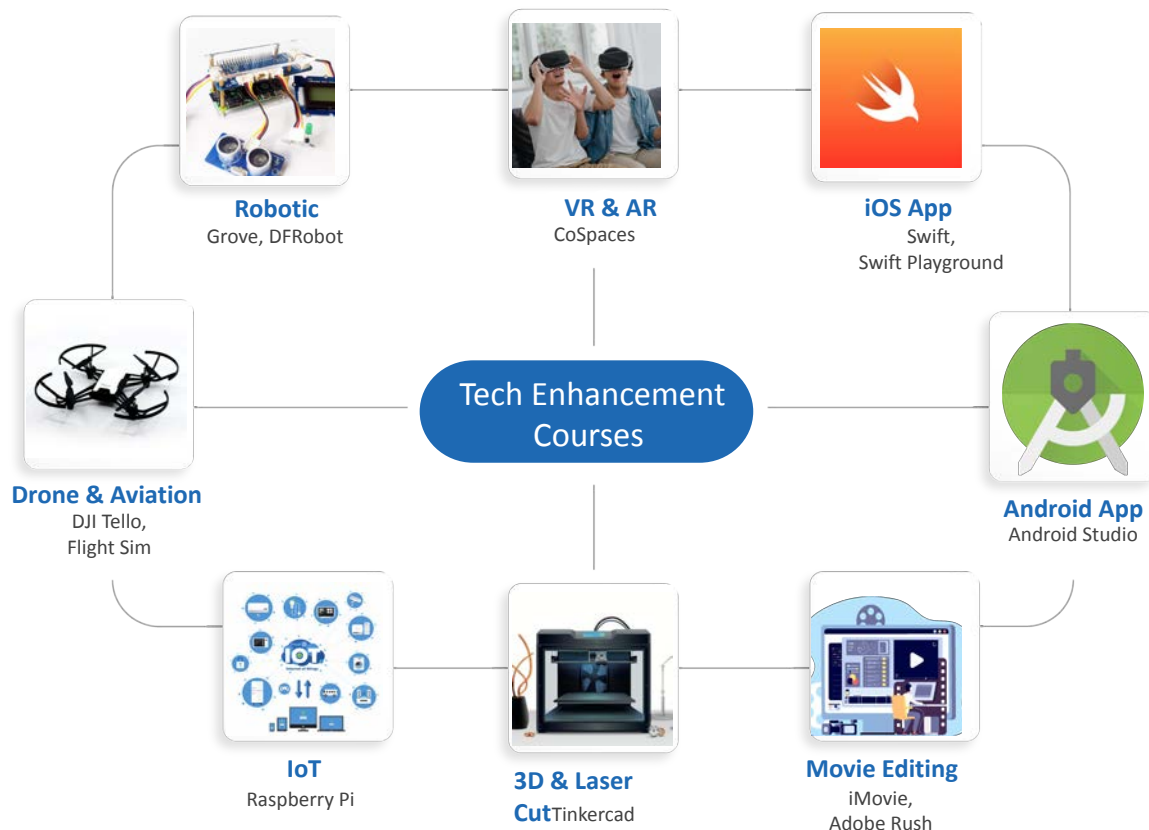
Learning and Teaching Expo (LTE)
Teachers sharing by >7 schools



Tech Enhancement Courses

Customers who buy any core AI course can pick these courses as well

New in 2021-2022





聖公會李福慶中學
SKH LI FOOK HING
SECONDARY SCHOOL

實踐停課不停學：以混合式學習平台教授人工智能

Together ...



... We Can

Thank you! Q&A

Slides in PDF

<https://qr.go.page.link>

