

An aerial photograph of the Hong Kong University of Science and Technology (HKUST) campus. The image shows a large, modern university complex with multiple buildings, a central courtyard, and a large stadium. The campus is surrounded by lush green hills and a large body of water with several islands in the distance. The sky is blue with scattered white clouds. The text is overlaid in yellow on the image.

Teaching and Learning Initiatives at HKUST

21 June 2019

T.C. Pong
Senior Advisor to Provost
Professor of Computer Science & Engineering
Hong Kong University of Science & Technology
E-mail: tcpong@ust.hk

Visit Program on Friday, 21 June 2019

- 9:30am: Arrive HKUST, the delegation will be greeted by Mr. Tony Fung at the Piazza
- 9:30am - 9:45am: 7/F Foyer
- 9:45am – 10:45am: Introduction to HKUST and its education initiatives by Prof. T.C. Pong (Room 4582)
- 10:45am – 11:15am: Visit the Engineering Commons and introduction to E2I by Prof. Ben Chan
- 11:15am – 11:45pm: Visit the UG Student-initiated Experiential Learning (USEL) Lab
- 11:45pm – 12:00pm: Walk along the academic concourse to Library
- 12:00am – 12:30am: Visit the HKUST Library
- 12:30pm – 2:00pm: Lunch at the G/F Chinese Restaurant
- 2:00pm: Depart HKUST



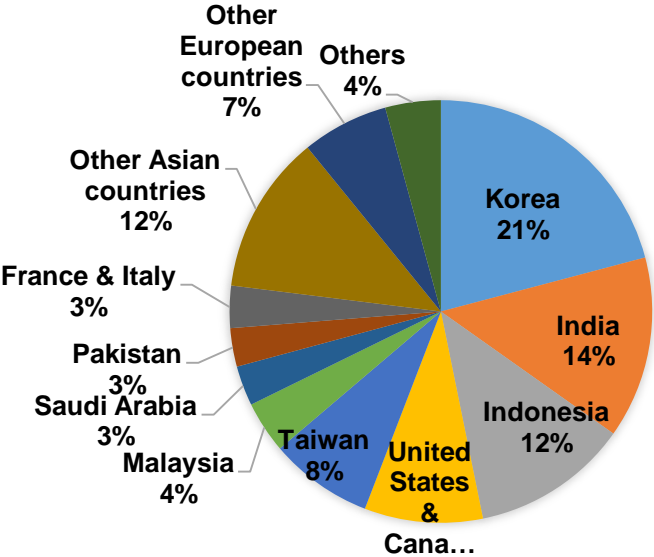
This is HKUST

- **A globally oriented university founded in 1991**
 - 687 Faculty (647 Regular Faculty & 40 Visiting)
 - 15,555 Students (Among UGC institutions with the highest % of non-local UG intake (2015/16))
 - 9,995 UG and 5,560 PG students
- **World-class research university with global reputation of excelling in science, engineering and business, complemented by humanities and social science**



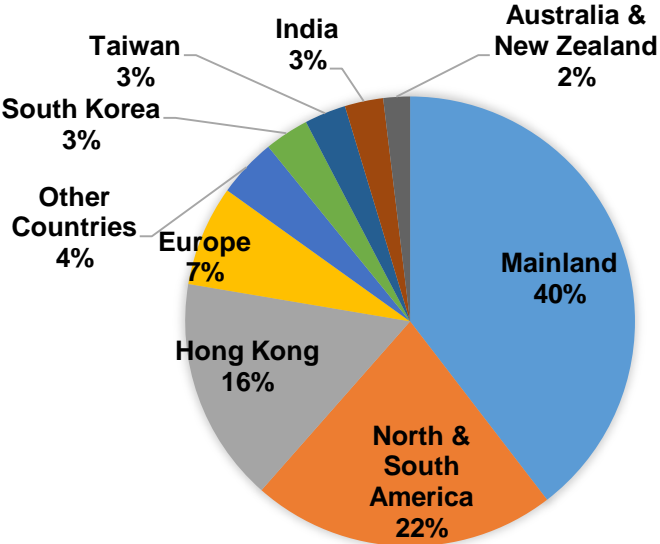
Champion of Diversity

**Citizenships of International Students
(excl. Mainland China) in 2018/ 19**



- Among UGC institutions with the highest % of non-local UG intake (2015/16)
- Over 300 Partners worldwide

HKUST Faculty Diversity 2018



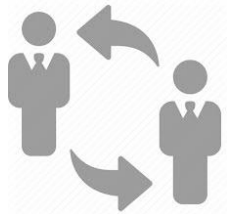
- **100% of tenure track faculty with doctorate degree**
- International faculty from 34 countries/ regions recruited (2018)



International Learning Experience



Student body
50+
Nationalities



1000+
Incoming
exchange
students



50%
of students
study abroad



300+
partners



International Partnership

300+
International Partners



HKUST MIT Research
Alliance Consortium



Member of 13+ International Alliances



10 Joint Laboratories



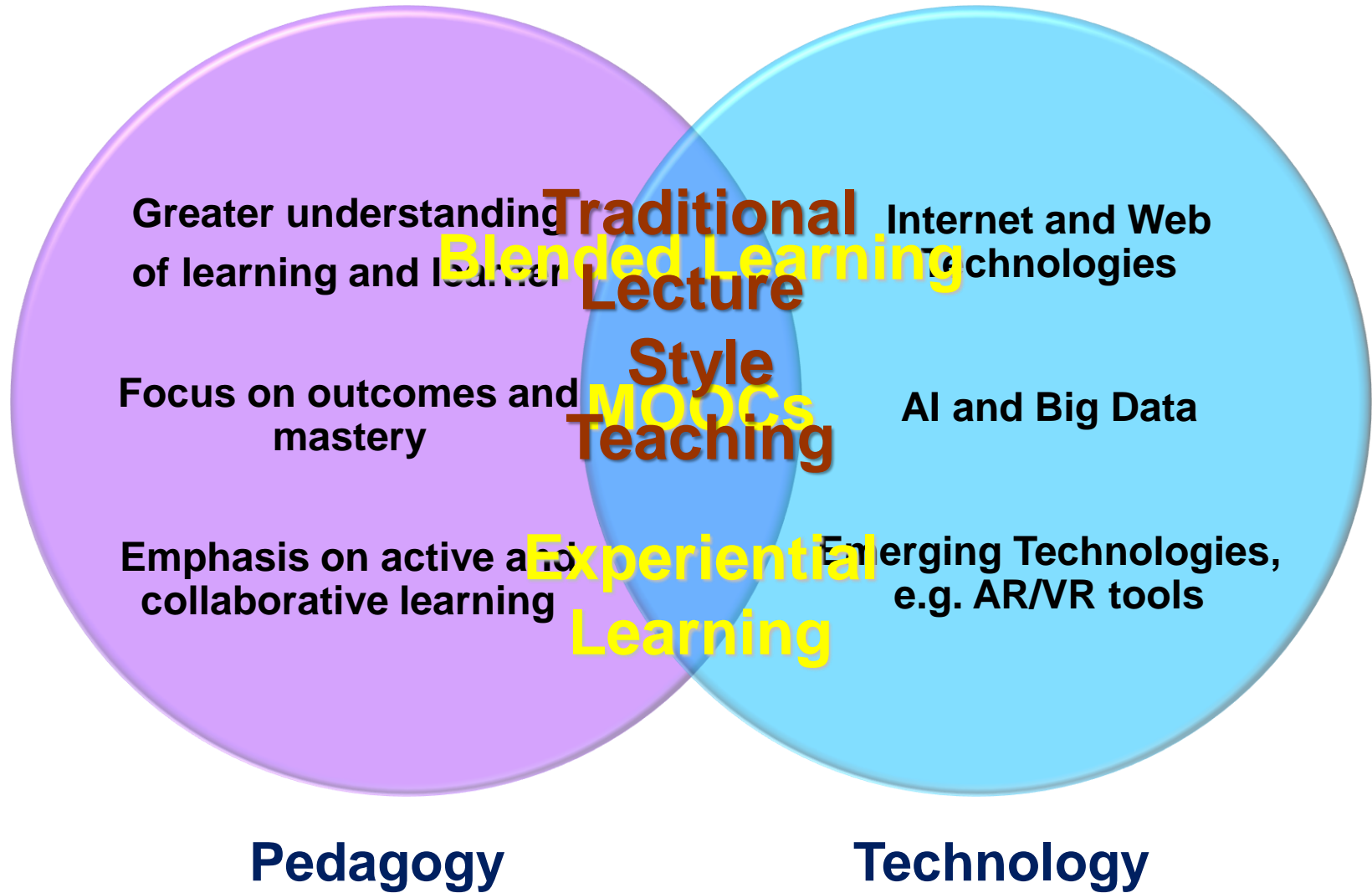


Outline

- Overview on pedagogical and technological development in the digital age
- Experience sharing on using MOOCs for:
 - blended learning
 - experiential learning
 - fully online delivery
- Research in innovative e-learning pedagogies
- Concluding remarks



Pedagogical and Technological Developments in the Digital Age





Criticism of Lecture Style Teaching

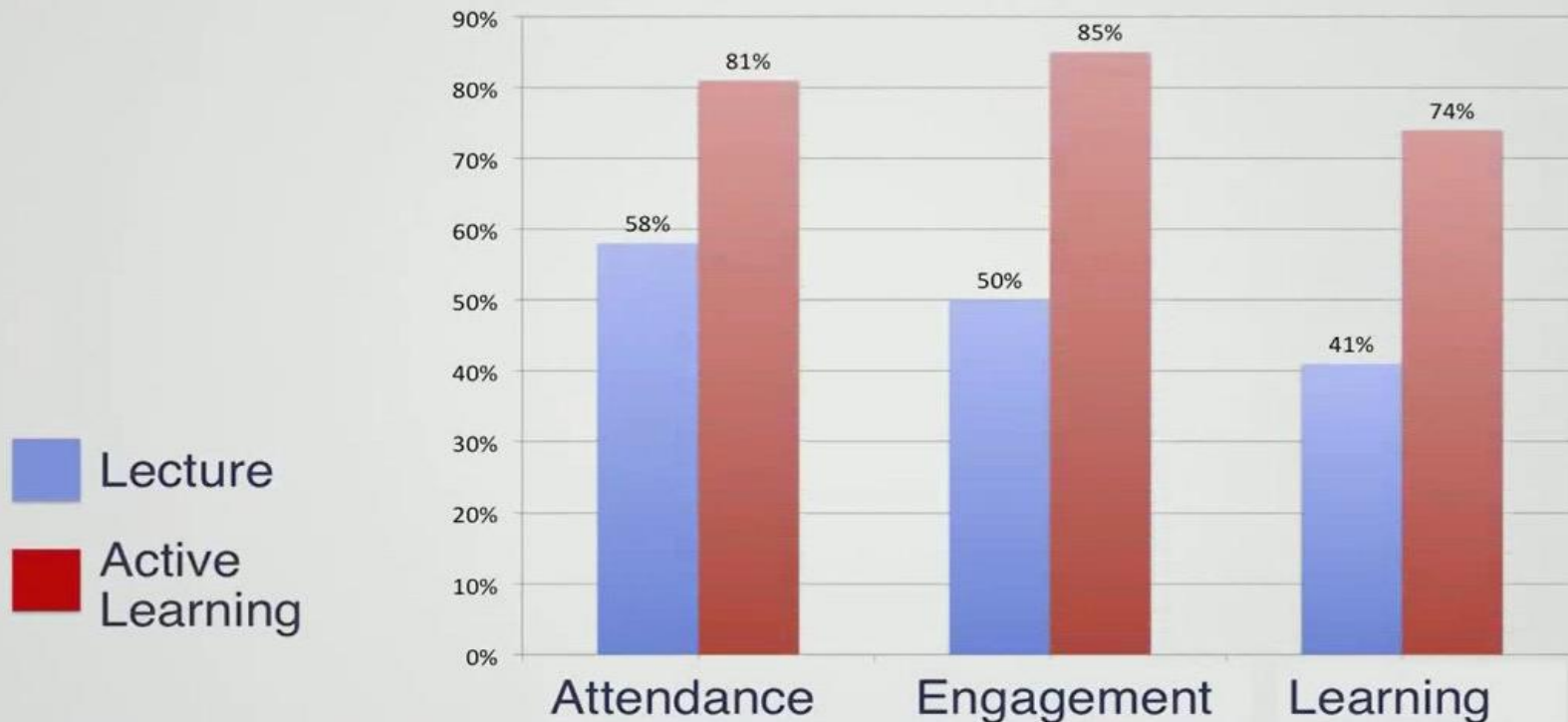
The criticisms of lecture style teaching can be summarized by a quote attributed to Mark Twain:

- College is a place where a professor's lecture notes go straight to the student's lecture notes, without passing through the brains of either.
- How to make teaching and learning more effective?
- Chinese proverb (Xun Zi 荀子):
 - Tell me and I will forget (闻之不若见之) ,
 - Show me and I will remember (见之不若知之) ,
 - Involve me and I will understand (知之不若行之) .**



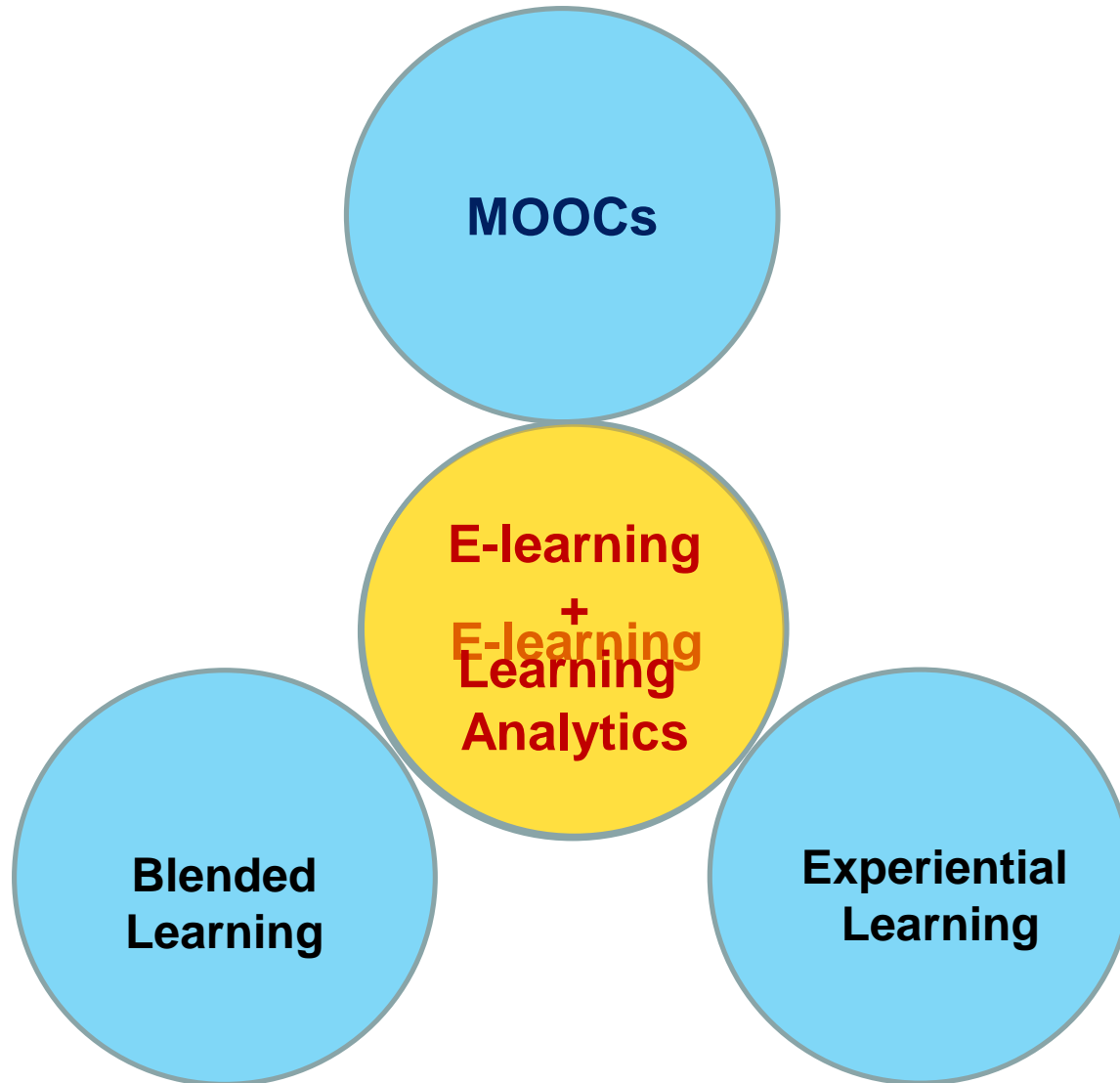
Active Learning

“Improved Learning in a Large-Enrollment Physics Class,”
Louis Deslauriers, Ellen Schelew and Carl Wieman, Science (2011).





Innovative E-learning Pedagogies





Massive Open Online Courses

A massive open online course (MOOC) is a type of online course aimed at large-scale participation and open access via the Internet.

- *In addition to online video lectures, learners are involved actively in the learning process.*
- *MOOCs go beyond just offering courses and content. Learning analytics allow us to understand how students learn and how teachers can improve their teaching.*



HKUST's MOOC Experience



HOW IT WORKS

COURSES

SCHOOLS

REGISTER NOW

log in



HKUSTx



VERIFIED

HKUSTx
ELEC1200.2x
A System View of Communications: From Signals to Packets (Part 2)

Starting Soon
Starts: October 27, 2015



VERIFIED

HKUSTx
ELEC1200.3x
A System View of Communications: From Signals to Packets (Part 3)

Upcoming
Starts: January 19, 2016



VERIFIED

HKUSTx
COMP102.1x
Introduction to Java Programming – Part 1

Current
Self-Paced





edX: 10 Most Popular Courses in 2016

 [View on web](#)




10 Most Popular edX Courses in 2016
Explore the courses that edX learners used to improve their lives and gain new knowledge

[Explore All Courses](#)

10 The Science of Happiness 4.5 / 5 ★★★★★

 [Enroll Now](#)

9 Conversational English Skills 4.5 / 5 ★★★★★

 [Enroll Now](#)

8 Introduction to Project Management 4.5 / 5 ★★★★★

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7 Introduction to Linux 4 / 5 ★★★★★

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6 Introduction to Java Programming – Part 1 4.5 / 5 ★★★★★

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5 The Science of Everyday Thinking 5 / 5 ★★★★★

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4 Introduction to Computer Science and Programming Using Python 4.5 / 5 ★★★★★

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3 TOEFL® Test Preparation: The Insider's Guide ETSx 4.5 / 5 ★★★★★

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2 Analyzing and Visualizing Data with Excel 4.5 / 5 ★★★★★

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1 Introduction to Computer Science 4.5 / 5 ★★★★★

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Top edX Courses in 2017

TOP 17
COURSES
in
2017

STAFF PICKS

TOP 17
COURSES
in
2017

LEARNER PICKS

TOP 17
COURSES
in
2017

HOT SKILLS



The Architectural Imagination
HarvardX (Self-Paced)



TOEFL® Test Preparation: The Insider's Guide
ETSx (Self-Paced)



Introduction to Computer Science and
Programming Using Python
MITx (Self-Paced)



HTML5 and CSS Fundamentals
W3Cx (Starts January 1, 2018)



IELTS Academic Test Preparation
UQx (Self-Paced)



Artificial Intelligence (AI)
ColumbiaX (Starts January 29, 2018)



Introduction to Linux
LinuxFoundationX (Self-Paced)



Essential Statistics for Data Analysis using Excel
Microsoft (Starts January 1, 2018)



Cybersecurity Fundamentals
RITx (Starts January 9, 2018)



Introduction to Project Management
AdelaideX (Self-Paced)



Basic Spanish 1: Getting Started
UPValenciaX (Self-Paced)



Machine Learning
ColumbiaX (Starts January 29, 2018)



Introduction to Java Programming – Part 1
KHUSTX (Self-Paced)



The Science of Happiness
UC BerkeleyX (Starts January 9, 2018)



Robotics: Fundamentals
PennX (Self-Paced)



Communication Skills for Bridging Divides
CatalystX (Starts January 9, 2018)



English Composition
ASUx (Starts January 8, 2018)





Coursera Top 10 Computer Science Specializations of 2016

Year in Review:

Top-Rated Specializations of 2016

Choosing a 2017 Specialization? These 10 were among the best-rated on Coursera this year - join today to see what the buzz is about.

Top-Rated in Computer Science

1 Python for Everybody



Enroll Now



Rating: ★★★★★

Review: "A fantastic course for anyone who comes from a non-programming background"

Course #1: Programming for Everybody

2 Web Design for Everybody

Basics of Web Development and Coding



Enroll Now



Rating: ★★★★★

Review: "So very well-explained and easy to follow... the absolute beginners"

Course #1: Introduction to HTML5

Offered by Profs. Jogesh Muppala and David Rossiter of HKUST

3 Object Oriented Java Programming

Data Structures and Beyond



Enroll Now



Rating: ★★★★★

Review: "Excellent course...I loved how the assignments built from easy to challenging"

Course #1: Object Oriented Programming in Java

4 Game Design and Development



Enroll Now



Rating: ★★★★★

Review: "If you want to create your own video game with Unity, this course is the first step"

Course #1: Introduction to Game Development

5 Graphic Design



Enroll Now



Rating: ★★★★★

Review: "Looking at the design materials I made, I almost cannot believe I did it by myself!"

Course #1: Fundamentals of Graphic Design

6 Full Stack Web Development



Enroll Now



Rating: ★★★★★

Review: "Gives you the big picture of how JavaScript, HTML, and CSS interact with each other"

Course #1: HTML, CSS, and Javascript

7 Software Product Management



Enroll Now



Rating: ★★★★★

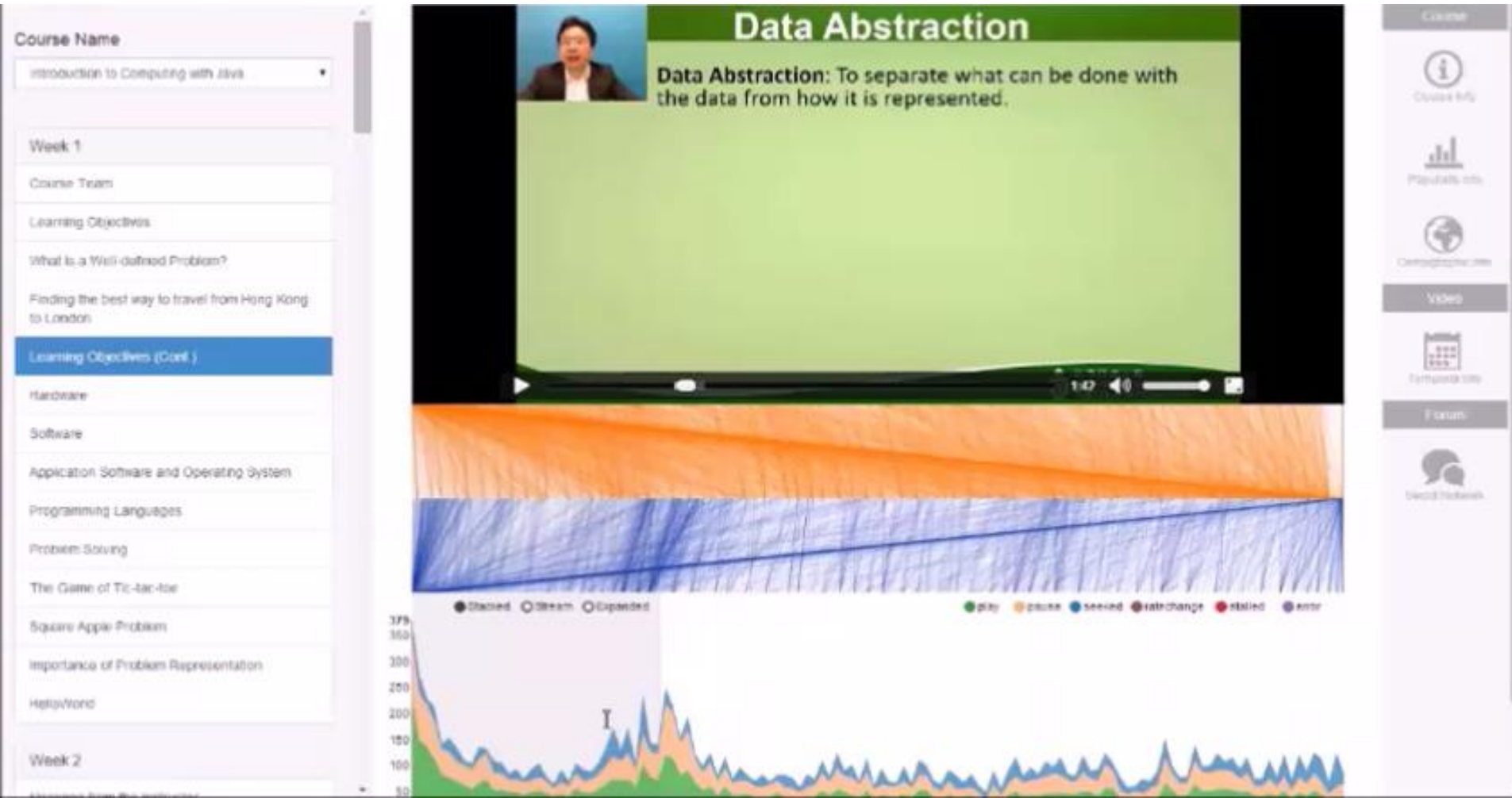
Review: "As a new Product Manager, I will be able to apply these lessons in real life situations"

Course #1: Introduction to Software Product Management



Learning Analytics on MOOCs

VisMOOC: A visual analytics tool for MOOC developed by Prof. Huamin Qu's research group





Social Network Analysis on MOOCs

VisMooc

Course Name

Introduction to Computing with Java

Week 1

Course Team

Learning Objectives

What is a Well-defined Problem?

Finding the best way to travel from Hong Kong to London

Learning Objectives (Cont.)

Hardware

Software

Application Software and Operating System

Programming Languages

Problem Solving

The Game of Tic-tac-toe

Square Apple Problem

Importance of Problem Representation

HelloWorld

Week 2

Message from the Instructor

Introduction

CourseGrade Example

Identifiers

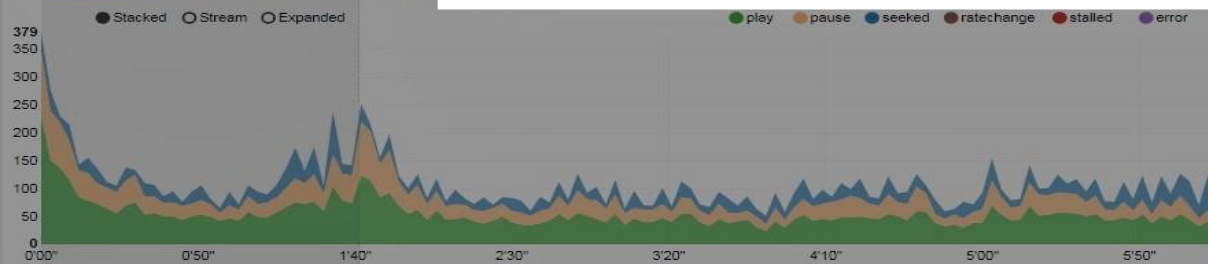
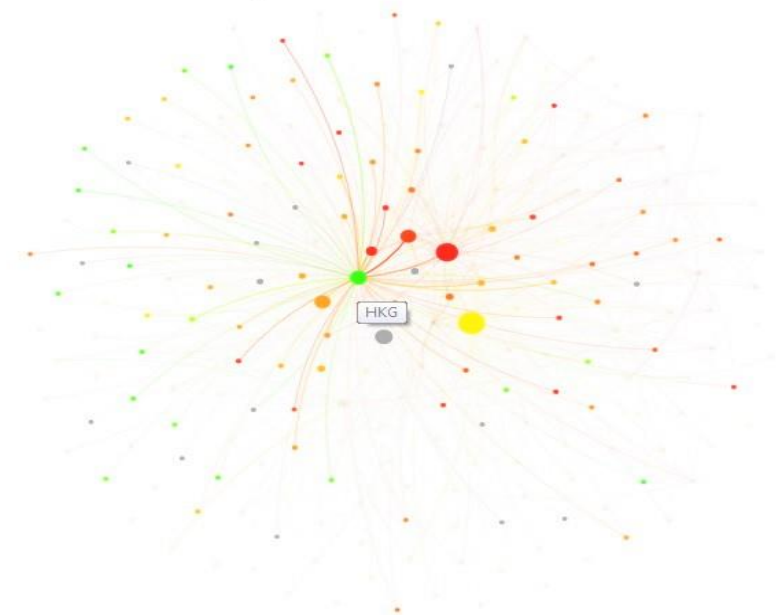
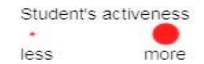
Variable

Data Types

Expressions

Forum Social Network

Filter users due to activeness





Social Network Analysis on MOOCs

VisMOOC Visual Analytics for Massive Open Online Courses

Course Name
introduction to Computing with Java

Week 1

- Course Team
- Learning Objectives
- What is a Well-defined Problem?
- Finding the best way to travel from Hong Kong to London
- Learning Objectives (Cont.)**
- Hardware
- Software
- Application Software and Operating System
- Programming Languages
- Problem Solving
- The Game of Tic-tac-toe
- Square Apple Problem
- Importance of Problem Representation
- Helicopter

Week 2

Video player showing a lecture slide titled "Data About the data" and a video of a speaker.

Stacked Stream Expanded

A stacked area chart with a y-axis ranging from 100 to 375. The chart shows three data series: 'Stacked' (dark blue), 'Stream' (orange), and 'Expanded' (green). The total value starts at approximately 375 and decreases to around 150 by the end of the period.

Forum Social Network

Student's grade: 15 (green) to 100 (red), No grade (grey)

Student's activeness: less (small red dot) to more (large red dot)

A network graph where nodes represent students. The nodes are colored based on their grade (green to red) and sized based on their activeness (small to large). A prominent yellow arrow points to a central node, indicating a specific student of interest.



Massive Open Online Degrees

HOME NEWS LEARN COURSES PROGRAM INFO

Georgia Tech College of Computing

ONLINE MASTER OF SCIENCE IN COMPUTER SCIENCE

Offered in collaboration with Udacity and AT&T

The Story

The Georgia Institute of Technology, Udacity and AT&T have teamed up to offer the first accredited Master of Science in Computer Science that students can earn exclusively through the Massive Open Online Course (MOOC) delivery format and for a fraction of the cost of

The Buzz

- ▶ [Presidential Double-Down: Obama Praises OMS CS for 2nd Time](#) - Georgia Tech College of Computing
- ▶ [Ga. Tech's MOOC Master's Degree Program Off to Solid Start](#) - WABE Atlanta



Intelligent Tutor at Georgia Tech

DOW JONES, A NEWS CORP COMPANY

DJIA ▼ 18123.80 -0.49%

S&P 500 ▼ 2139.16 -0.38%

Nasdaq ▼ 5244.57 -0.10%

U.S. 10 Yr ▼ Q/32 Yield 1.692%

Crude Oil ▼ 43.19 -1.64%

Euro ▼ 1.1157 -0.77%

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In Flood-Ravaged Louisiana, Small Businesses Struggle to Recover



Inside W High-Po Culture



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A-HEd

Imagine Discovering That Your Teaching Assistant Really Is a Robot

Students mostly couldn't tell 'Jill Watson' wasn't human; 'Yep!'





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catholique
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University of
California, San Diego



University of
Queensland



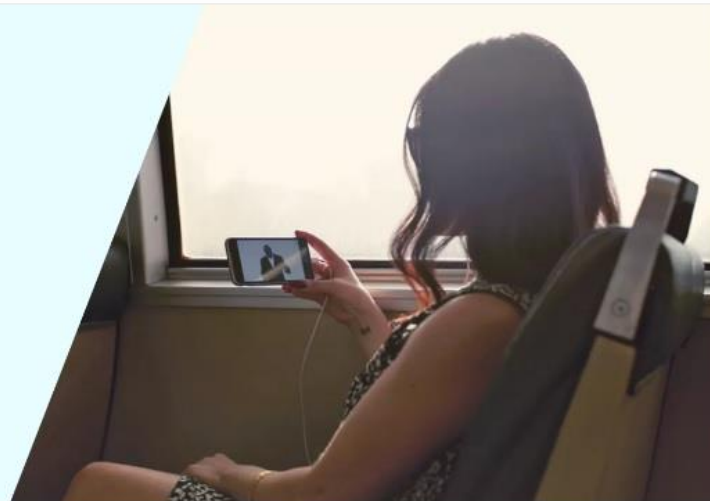
Indiana University



Curtin University

Earn your Data Science Degree online

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University of Illinois at Urbana-Champaign



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University of Illinois at Urbana-Champaign



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HEC Paris

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University of Michigan



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University of Illinois at Urbana-Champaign

Computer Science

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Master of Computer Science
Arizona State University



Bachelor of Science in Computer Science
University of London



Master of Computer Science
University of Illinois at Urbana-Champaign



Master of Computer and Information Technology
University of Pennsylvania

Public Health

[Learn more >](#)



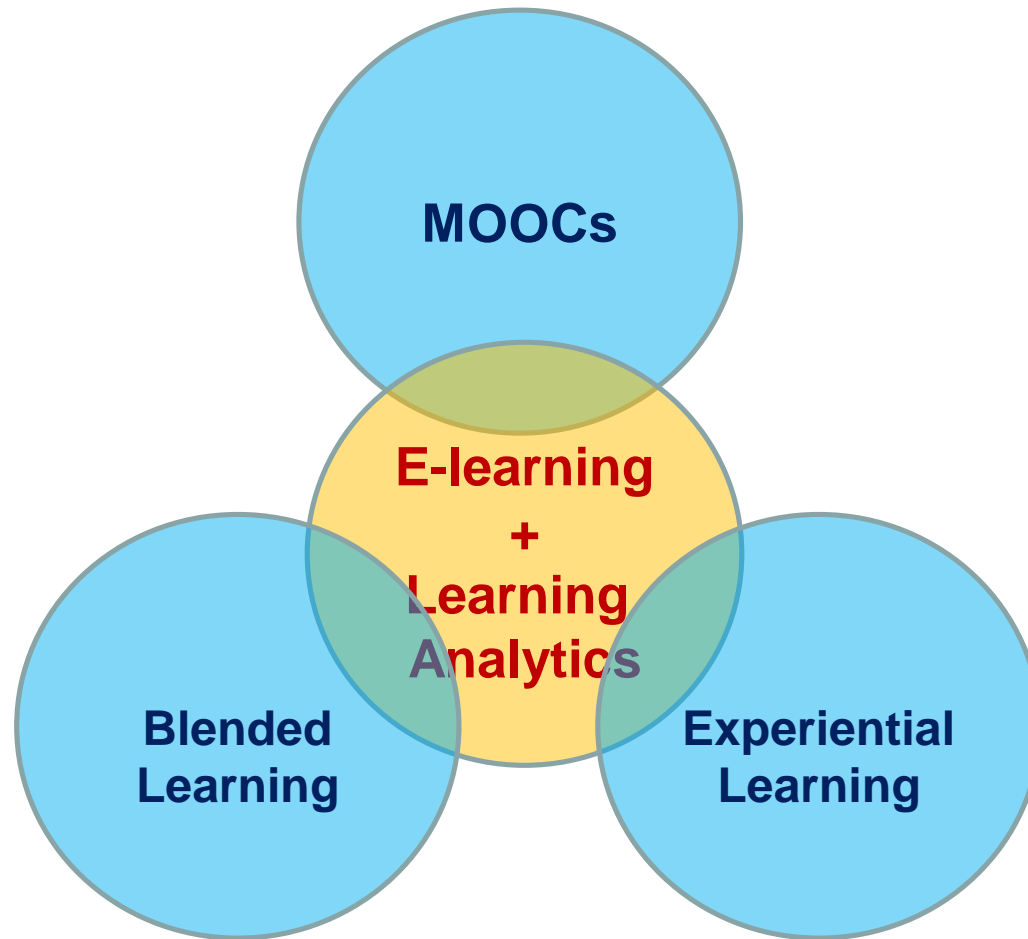
Global Master of Public Health
Imperial College London



Master of Public Health
University of Michigan



Innovative E-learning Pedagogies





Using MOOCs for Asynchronous Flipped

Flipped Classroom pedagogy inverts traditional teaching

In classroom

Outside classroom





Using MOOCs for Asynchronous Flipped

Flipped Classroom pedagogy inverts traditional teaching

Outside classroom

In classroom



In **Asynchronous Flipped**, students finished all online learning activities before engaging in classroom learning



Using MOOCs for Asynchronous Flipped

The Java programming course was conducted using asynchronous flipped in Spring + Summer of 2016-17 and 2017-18.

- In 2016-17
 - Around 130 students completed the MOOC in the Spring semester
 - Participated in an assessment to confirm participation
 - 41 Students (12 from Hong Kong, 14 overseas exchange and 15 Mainland China) were selected to enroll in a 2-week face-to-face Summer session
 - Took an exam to earn academic credits for the course
- Two professors from Hong Kong and Spain jointly offered the course in 2016-17



MOOCs on Java Programming



<https://www.edx.org/professional-certificate/java-android-foundation>



Array Applications

- Given a list of test scores, determine the average, maximum and minimum scores.
- Read in a list of student names and rearrange them in alphabetical order (sorting).
- Track the ups and downs of a stock index.
- Represent and analysis a digital image as a 2D array.

For example, to determine the average, maximum and minimum scores, for a list of scores.

To read in a list of student names and rearrange them in alphabetical order.

This process is often called sorting.

To keep track of the movement of the stock market, sometimes you may even want to handle multidimensional data.

For example, in manipulating two-dimensional digital images.

You'll find that arrays would be useful for all such applications.

An array is a collection of homogeneous data objects.

That is, they must be data of the same type.

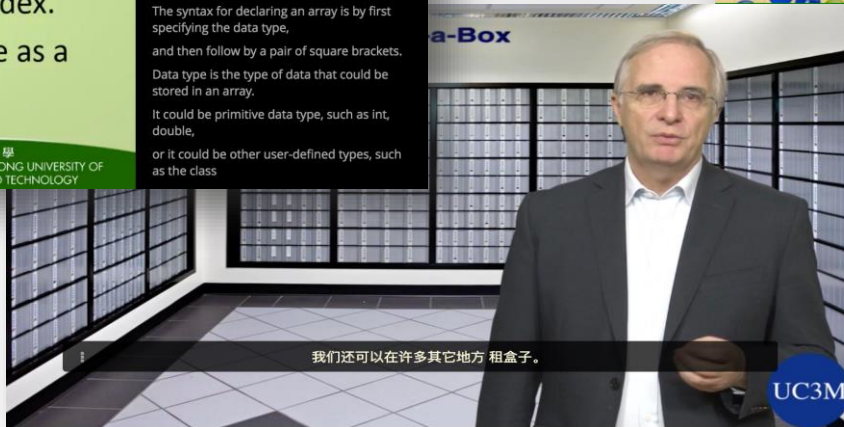
The syntax for declaring an array is by first specifying the data type,

and then follow by a pair of square brackets. Data type is the type of data that could be stored in an array.

It could be primitive data type, such as int, double,

or it could be other user-defined types, such as the class

```
public static void main(String[] args) {
    int []array = {3,78,98};
    for (int i = 0; i < array.length; i++)
        array[i]=i*2;
    System.out.println(array[i]);
}
```



在邮局，我们可以租一个邮箱，以便接收我们的信件。

我们还可以在许多其它地方租盒子。

比如说，在银行，为了存放贵重物品我们可以租一个保险箱。

在火车站，为了保管手提箱，我们可以租一个行李柜。

箱子通常通过连续的编号进行标示。

箱子或储物柜的大小可能总是不同。

在编程中，我们已经看到了能够允许我们储存不同值的变量。

在这里，我们可能看到不同... 具体取决

我们还可以在许多其它地方租盒子。



<https://www.edx.org/professional-certificate/uc3mx-introduction-java-programming>



Asynchronous Flipped at HKUST



Introduction to Computing with Java

HKUST - COMP1022P
Started - Mar 06, 2017

[View Course](#)





Using MOOCs for Asynchronous Flipped

A pilot trial was conducted in Spring / Summer 2016-17 on the Java programming course:

- Two professors from Hong Kong and Spain
- 41 Students – 12 from Hong Kong, 14 overseas exchange and 15 Mainland China:
 - Complete the MOOC in the Spring semester
 - Take an assessment to confirm participation
 - Enroll in a 2-week face-to-face Summer session
 - Take an exam to earn academic credits for the course
- Using learning analytics in designing in-class learning activities



Using Learning Analytics in Designing In-class Activities

VisMooC

About Us Help

- Assignment Statements
- Memory Allocation
- CourseGrade Demo
- Simple I/O
- Barcode Demo

- Week 3
- Message from the Instructor
- Introduction to Object-oriented Programming Part 1
- Introduction to Object-oriented Programming Part 2
- Example: Car
- Car Demo
- Constructor**

- Method
- Comments
- Example: Bank Account
- BankAccount Demo
- Example: ColorImage
- ColorImage Demo
- 3D ColorImage Demo
- Example: Car2
- Car2 Demo

- Week 4
- Message from the Instructor
- Scope Part 1
- BankAccount Demo

General Structure of a Class declaration

```

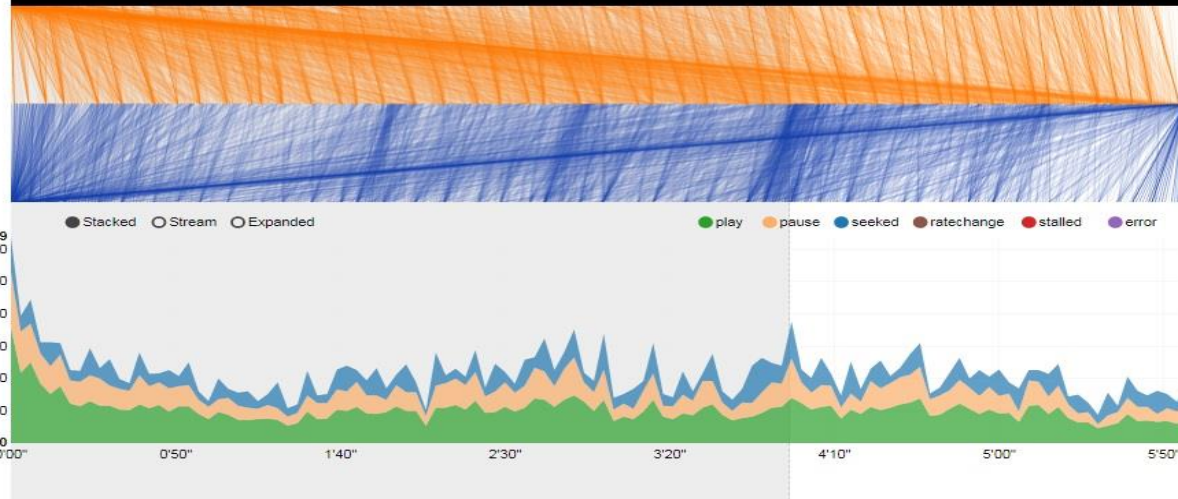
/**
 * Write a description of class NewClass here.
 * @author (your name)
 * @version (a version number or a date)
 */
public class NewClass
{ // instance variables - replace the example below with your own
  private int x;

  /**
   * Constructor for objects of class NewClass
   */
  public NewClass()
  { // initialise instance variables
    x = 0;
  }

  /**
   * An example of a method - replace this comment with your own
   * @param y a sample parameter for a method
   * @return the sum of x and y
   */
  public int sampleMethod(int y)
  { // put your code here
    return x + y;
  }
}

```

Constructors →



- Course
- Course Info
- Popularity Info
- Age Info
- Demographic Info
- Animation
- Video
- Temporal Info
- Forum
- Sentiment Analysis
- Social Network
- Peak
- Overview
- Flowmap
- Correlation



Student Feedback Questionnaire

COMP1022P – Introduction to Computing with Java Summer 2016)

5-level answers to each question: Strongly agree - 100 Strongly disagree - 0

- The course has been well designed to help me learn. 90
- The online materials have stimulated my interest in this subject, and encouraged me to think. 85.2
- I was provided with clear instructions and adequate support to help me self-study the online components. 87.5
- The online content and activities prepared me well for the face-to-face sessions. 92
- The online platform has helped to support my learning in this course. 93.2
- The instructor facilitated the face-to-face activities well, stimulated my interest and encouraged me to think. 93.2
- In the face-to-face discussions and activities, there have been a lot of opportunities for me to apply/practice the concepts and theories I have learnt from the online components. 90.9
- There have been a lot of opportunities for me to interact with the instructor, TA and students which has deepened my learning. 93.2



Using MOOCs for Asynchronous Flipped

The Java programming course was conducted using asynchronous flipped in Spring + Summer of 2016-17 and 2017-18.

- In 2016-17
 - Around 120 students completed the MOOC in the Spring semester
 - Participated in an assessment to confirm participation
 - 41 Students (12 from Hong Kong, 14 overseas exchange and 15 Mainland China) were selected to enroll in a 2-week face-to-face Summer session
 - Took an exam to earn academic credits for the course
- **A model to use MOOCs for expanding student / faculty exchange programs and outreach to secondary school students**



Global Virtual Exchange Alliance



Outcomes workshop Virtual Exchange

2-3 November 2017, Hong Kong





Global Virtual Exchange Alliance

- Nine Universities signed agreement in Dec 2017

- US: Rice;
- Europe: EPFL, TU Delft, Leiden, Wageningen;
- Australia: ANU, UQ, Adelaide;
- Asia: HKUST



- Credit-bearing online courses with proctored examinations.
- Students get credits from host university & transfer credits back to home university (just like exchange program but done online instead).
- Benefits:
 - Provide culturally diversified on-line courses for students locally on campus

Global Virtual Exchange Website



GLOBAL VIRTUAL EXCHANGE

ABOUT

The Virtual Exchange Alliance

HKUST has entered into a Virtual Exchange Alliance consisting of top universities from around the world. As a member of the Alliance, HKUST recognizes the quality of the online courses, including MOOCs (massive open online course), offered by the member universities. HKUST undergraduate students are able to apply and enroll in a selected number of online courses and apply for HKUST credit transfer upon successful course completion.



Participating Universities:

- The Hong Kong University of Science and Technology
- Australian National University (Australia)
- Delft University of Technology (The Netherlands)
- École polytechnique fédérale de Lausanne (Switzerland)
- Leiden University (The Netherlands)
- Rice University (USA)
- University of Adelaide (Australia)
- University of Queensland (Australia)
- Wageningen University and Research (The Netherlands)



COMP1022P on GVEP



HKUST: COMP1022P Introduction to Computing with Java (Fall 2018-19)

Help



TC

View this course as:

[Home](#) [Course](#) [Course Outline](#) [Grading Scheme](#) [Resources](#) [Discussion](#) [Progress](#) [Instructor](#)

Welcome to HKUST's COMP1022P!

Introduction to Computing with Java (Fall 2018-19)

[Resume Course](#)

Course Updates and News

[VIEW UPDATES IN STUDIO](#)

September 14, 2018

[Hide](#)

Induction session summary

Dear Students,

The induction video is now available in the induction module on the HKMOOC platform. You can access it through this [link](#). For those who have attempted to attend the induction session but encountered technical difficulties, please report to us either through the discussion forum on HKMOOC.

The due date of all the online exercises and labs in Module 01 – 05 is confirmed to be on **Monday, 08 October at 23:59pm (GMT+8) Hong Kong time**, that is, **08 October at 17:59pm (GMT+2) Europe time**. You are suggested to work on the exercises and labs evenly instead of finishing all of them in a short period of time.

The contents of Module 06 – 10, as well as the additional lab exercises will be released at a later point. More details will be announced later.

Course Tools

[Bookmarks](#)

Important Course Dates

Course End

2 weeks ago - Dec 28, 2018

This course is archived, which means you can review course content but it is no longer active.

Today is Jan 13, 2019 13:51 HKT

Course Handouts

1. You may refer to the clock below for the current Hong Kong time (GMT+8) for assignment submission due date and time:



COMP1022P on GVEP in Fall 2018

Student groups	No. of students	Midterm	Final	Overall
HKUST face-to-face	282	75	76	78
Global Virtual Exchange	32	84	84	87
Total	314	76	77	78



Joint Institutions Online Course

The Association of East Asian Research Universities

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- About
- 17 Members
- Activities
- Link
- Members' Contact



 東亞研究型大學協會
東アジア研究型大学協会
동아시아연구중심대학협의회
The Association of East Asian Research Universities

THE ASSOCIATION OF
EAST ASIAN
RESEARCH UNIVERSITIES

Home ▶ About






About AEARU

The Association of East Asian Research Universities (AEARU) is a regional organization founded in January 1996, with the goals of forming a forum for the presidents of leading research-oriented universities in East Asia and of carrying out mutual exchanges between the major universities in the region. Expectations are that this regional union, on the basis of common academic and cultural backgrounds among the member universities, will contribute not only to the development of higher education and research but also to the opening up of a new era leading to cultural, economic and social progress in the East Asian region.



Joint Institutions Online Course

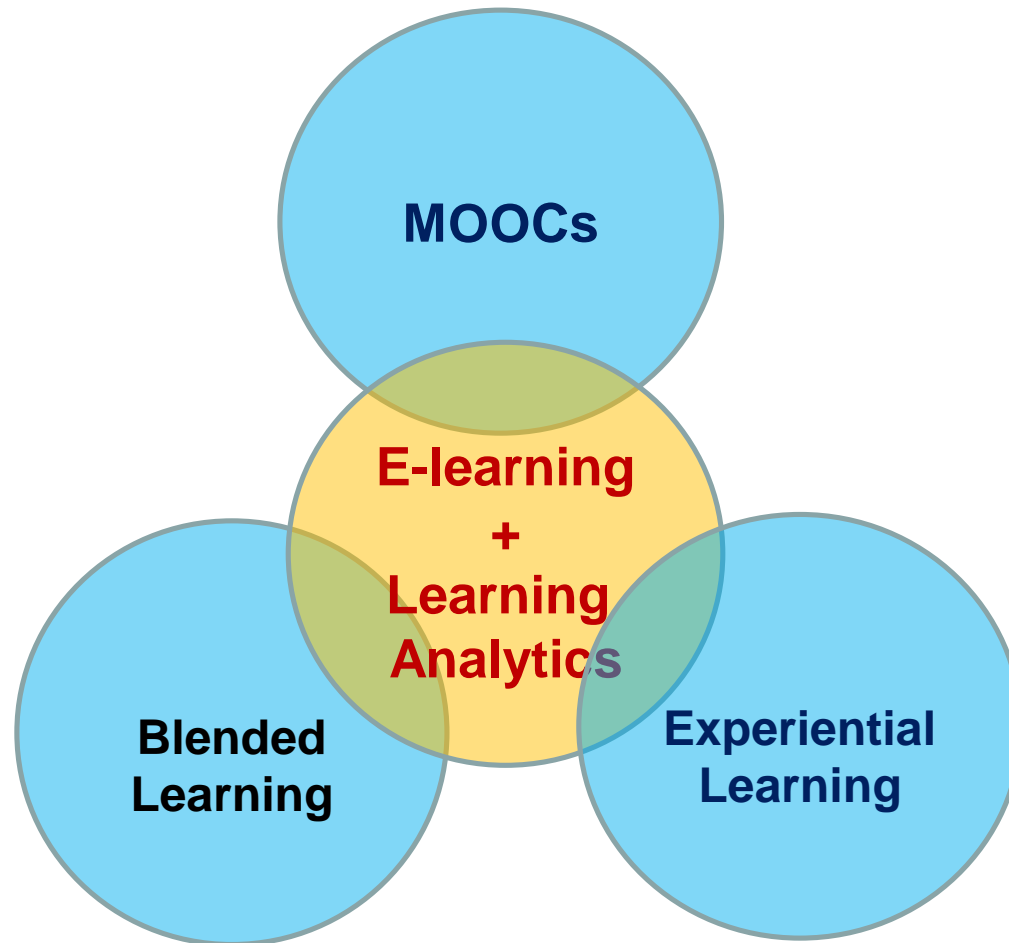
COURSE LIST: THREE ICONIC ONLINE COURSES

No	Course Name	Instructor	
1	Modern Japanese Architecture	Prof. David Butler Stewart, Specially Appointed Professor of School of Engineering, Tokyo Tech	
2	Social Inequality in China, 1700-2000, in Comparative Perspective	Prof. James Lee, Chair Professor of Humanities and Social Science, HKUST	
3	Java Programming Bridging Course	Prof. Ting Chuen Pong, Director of Center for Engineering Education Innovation, HKUST	





Innovative E-learning Pedagogies





Experiential Learning in Makerspace



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Undergraduate Education

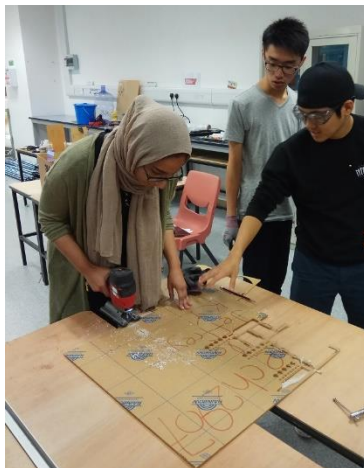
USEL

- USEL - ASM Pacific Technology Award 2018
- FAQ
- Approved Projects
- Equipment and Tools
- Share Your Idea

Undergraduate Student-initiated Experiential Learning (USEL) Program

Background

In order to encourage students to develop their own project idea, the School of Engineering is providing student-driven practicum opportunities to UG students through the Undergraduate Student-initiated Experiential Learning Program. Students may initiate projects of their interest under guidance of a faculty member of School of Engineering.





1st Year Cornerstone Engineering Design Project Course

A cornerstone engineering design project course for over 700 1st year engineering students every year:

- To provide students exposure to knowledge and skills from different engineering disciplines
- To engage students in team projects that connect engineering design with real-world problems
- To use a blended experiential learning approach for scaling up



HKMOOC Platform developed at HKUST

HKMOOC

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*This is the homepage of HKMOOC,
the MOOC platform for Hong Kong's Tertiary Education Sector.*





A Blended Experiential Learning Course on Cornerstone Design Project

Home Course Discussion Wiki Progress Instructor

Bookmarks search

Course Introduction

Mechanical

Android App

Electronics

Capstone Project

Preliminary Engineering Design

Preliminary Design due Jan 12, 2017 at 23:59 UTC

Arduino Motor Control

Android Bluetooth Remote Controller

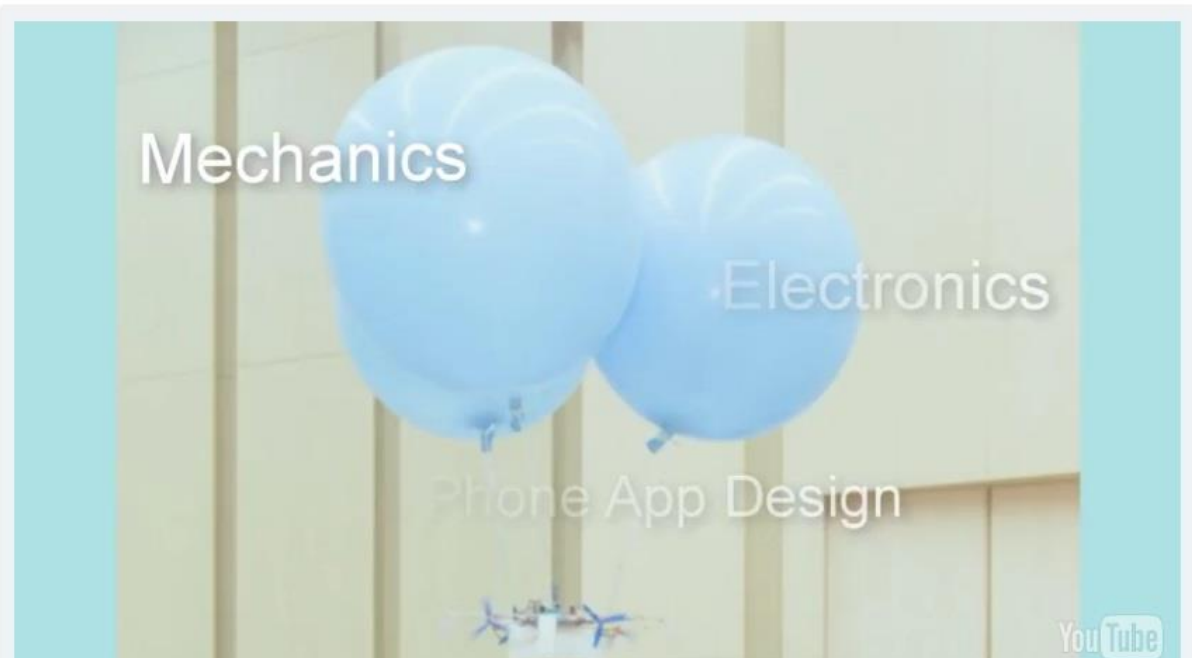
Course Introduction > Course Overview > Intro to Course Faculty



VIEW UNIT IN STUDIO

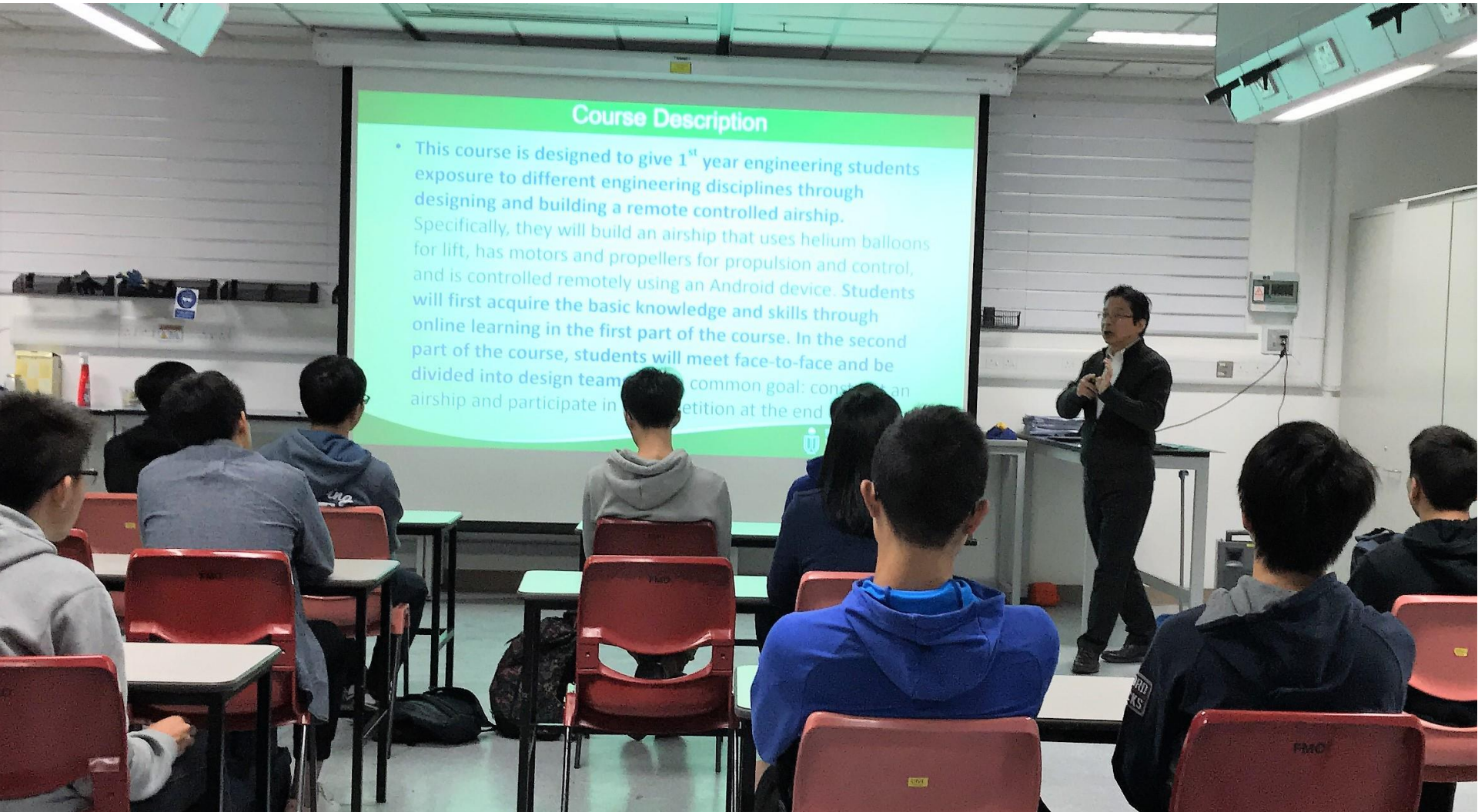
Bookmark

Intro to Course Faculty





1st Year Cornerstone Engineering Design Project Course



Course Description

- This course is designed to give 1st year engineering students exposure to different engineering disciplines through designing and building a remote controlled airship. Specifically, they will build an airship that uses helium balloons for lift, has motors and propellers for propulsion and control, and is controlled remotely using an Android device. Students will first acquire the basic knowledge and skills through online learning in the first part of the course. In the second part of the course, students will meet face-to-face and be divided into design teams with a common goal: construct an airship and participate in a competition at the end.

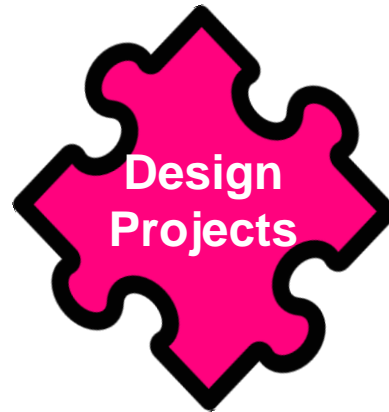


Engineering Design Project Course – Final Competition





Using Design Projects to Nurture Students' Competencies





Code2App Challenge to Promote Computational Thinking to K-12

About HKEdCity Teacher Student (Sec) Student (Pri) Parent Partner

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CODE 2 APP
挑戰計劃

主理: 科大-李錦記 HKUST-Lee Kum Kee 香港教育城 HKEdCity
Organisers: 香港家庭學習中心 Happy Family Learning Center

Details Contest Requirements / Judging Criteria Winners Activities Online Learning Enquiry

Details

In January 2017, the Environment Bureau of the Hong Kong SAR Government released the Hong Kong's Climate Action Plan 2030+ report, in response to increasingly severe consequences of climate change by setting up targets for reducing carbon emissions. One way to achieve the target is to minimize different types of waste. A significant portion of waste, which goes to landfill, belongs to household waste (such as food, construction, paper, and plastic). Thus, reducing the amount of household waste is crucial to the environmental sustainability of Hong Kong.

To address sustainability as an important issue, Hong Kong Education City (HKEdCity) and HKUST-Lee Kum Kee Happy Family Learning Center are jointly organizing the 'Code2App' program for primary and secondary school students. Students can make use of their coding and computational thinking skills, along with their creativity to build Android apps, to arouse the public awareness of reducing household waste.

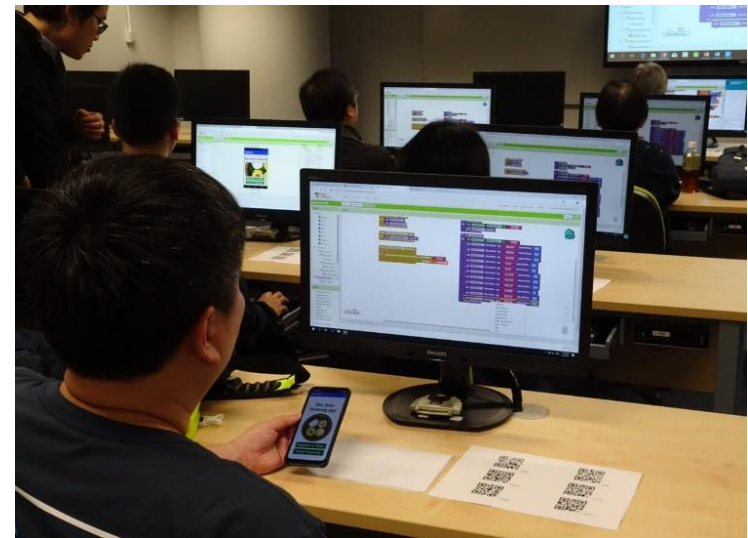
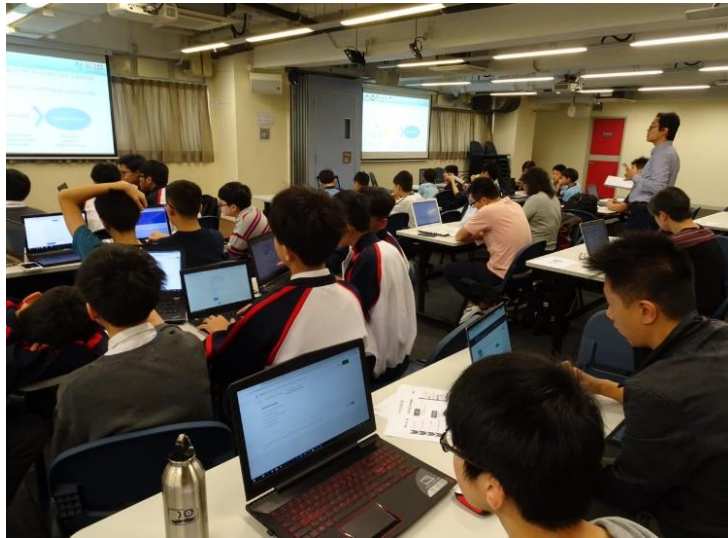
 Result of the Application Development Contest is announced. [Click here to view the information.](#)

A. Objectives

1. To empower teachers and students to utilize computational thinking and code using App Inventor
2. To stimulate students' creativity and apply computational thinking to design an Android app expressing the theme
3. To enhance students' awareness of sustainability
4. To promote harmonious family relationships by collaboratively solving a problem



Workshops





Code2App Challenge to Promote Computational Thinking to K-12

Division	# of submissions	Shortlisted Teams
Primary School Division	15	6
Secondary School Division	64	6



Sample Submissions



Project Objectives:

This app aims to help people to make:

1. Smart use of resources before expiring
2. Smart use of money by avoiding buying unnecessary things
3. Smart use of people network for sharing
4. Smart use of space at home

And promote sense of reducing waste as the motto

Smart Use App
Po Leung Kuk Lam Man Chan English Primary School





HKUSTxMinerva Scholars Program

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San Francisco start-up Minerva 'more selective than Ivy League'

16,000 apply for mainly online Minerva education as traditional college costs soar

This college startup has a 1.9% acceptance rate, making it tougher to get into than Harvard



Abby Jackson

Apr. 5, 2016, 11:16 AM 31,609

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College startup Minerva Schools, whose students explore up to seven cities during four years of study, has received 16,000 applications for 306 available places this year, the Financial Times reported.

That acceptance rate for the unconventional college, at 1.9%, is far lower than at any schools in the Ivy League, as well as at Stanford.



The Minerva offices – where all employees work at open-plan stations – recall a typical tech startup far more than they do an academic building. *Ike Edeani / The Atlantic*



25

 Save

by: Andrew Edgecliffe-Johnson in New York

San Francisco start-up aiming to offer an Ivy League-level education at half the cost. The US colleges has accepted a smaller fraction of its applicants than Harvard or Stanford in its third year of operation.



Research and Development in E-learning

- A Data Science and E-learning Research Cluster established under the HKUST-MIT Research Alliance Consortium which leverages Hong Kong Innovation and Technology Commission's ITF 9:1 matching fund. Three projects have been funded for a total of HK\$40M:
 - An Open Learning Design, Data Analytics and Visualization Framework for E-Learning
 - A Personalized E-Learning Platform
 - Evidence based Education based on Data Analytics
- Funding from the UGC Teaching and Learning Funding Scheme for developing a Hong Kong MOOC Platform and Cornerstone projects for a total of HK\$18M.
- Other collaborative projects related to e-learning HK\$50M.



VR / AR in Education

Application of VR / AR in different education-related topics:

- STEM subjects
- Medicine and health care
- Language
- Culture and history
- Sustainability
- Art and music
- ...

Thank you!

