Embracing a New Era of Artificial Intelligence in Pre-tertiary Education – The CUHK Jockey Club AI for the Future Project (2019-2022)

Artificial intelligence (AI) is a rapidly developing field that is fundamentally transforming our world. Recognizing its importance to the future generations, CUHK has launched an initiative aimed at driving changes in the educational ecosystem of Hong Kong secondary schools towards the incorporation of AI components. This three-year initiative, entitled the CUHK Jockey Club AI for the Future Project (CUHK-JC iCar) (the Project), is jointly spearheaded by the Faculties of Engineering and Education and funded by the Hong Kong Jockey Club Charities Trust.

AI Curriculum for Junior Secondary Levels

Since its inception in August 2019, the Project has worked in close collaboration with 6 selected pioneering secondary schools, through a co-creation process that leads to the design, development and deployment of a junior secondary AI curriculum. This process has produced the first-ever comprehensive AI curriculum in Hong Kong, comprising 12 chapters and 55 modules organized under the pedagogical framework of Awareness, Knowledge, Interactions, Empowerment and Ethics and Impact. In particular, AI Ethics and Future of Work are emphasized throughout the curriculum for young students to acquire early the important perspectives relating to ethical use of AI technologies, as well as to guard themselves against misuse of AI technologies. Additionally, the curriculum is supported with hands-on experiments, hardware and software toolkits, an e-learning platform, assessment and evaluation surveys, as well as public educational activities and events. The Project team has specially designed a hardware toolkit, “CUHK-JC iCar”, with built-in AI functions that tightly couple with the delivery of the curriculum in junior secondary classrooms.

The baseline assessment of the first year pilot teaching conducted by the 6 pioneering schools indicated that teachers and students were satisfied with the developed AI curriculum, though most lessons and activities had to be conducted online due to the pandemic. Pilot teaching is now ongoing in 18 local secondary schools and will be extended further to a total of 38 schools in the academic year of 2021/2022.

Official Announcement Ceremony and Year One Achievements Sharing

The Project held an announcement ceremony on 28 November 2020 with the overwhelming participation of more than 150 guests, school principals, teachers, students, representatives from the industry and the media. The HKGAR Government Secretary for Education, Mr. Kevin YEUNG Yun-hung JP, CUHK Pro-Vice-Chancellor Professor Isabella PDON, Executive Director, Charities and Community of The Hong Kong Jockey Club, Mr. Leong CHEUNG and Principal Investigator of the Project Professor Yeung YAM, officiated the ceremony.

Public Education and Dissemination

The Project has held a Secondary Schools Think and Create Competition 2020, and also an AI virtual boot camp on 28-30 December 2020 for local secondary school students. Both events were well-received. Future public events being planned include the opening of the CUHK AI Education and Exploration Lab (人工智能教育及探索實驗室) (summer camp, AI summit, and open seminars).

With a view to prepare Hong Kong for upcoming challenges and to develop into a knowledge-based economy, the Faculty of Engineering, CUHK has set up an “Innovation and Technology Student Club” (ITSC) jointly with Innovation and Technology Commission (ITC). Our vision is to nurture young talents to become future technology elites who will contribute to the development of Hong Kong. Since November 2020, we have recruited over 2,000 secondary students with interests in science and engineering.

During December 2020, ITSC set up a virtual booth at InnoCarnival 2020 organized by ITC, highlighting ITSC’s achievements and exhibiting our renowned celebrative activities. We also designed two online STEM games to engage public. The games were challenging as players had to calculate fast to win the prize. We had a total of 14 big prize winners.

STEM Tutors

Our STEM tutors were composed of 2 members (secondary students) and 2 university students. One of the team was planning STEM course for junior students. The coming workshop’s theme is “3D printing pen” in which all participants would learn how to create a 3D printing model and get the 3D printing pen after the 3 hour workshop.

One of ITSC’s STEM tutors team: they are planning and studying about 3D printing

Action now to apply for ITSC membership and add “Like” on our Facebook page to receive ITSC first-hand news.

ITSC is planning various activities like Technology reporter, research internship, technology ambassador, summer camp, workshops in coming March and summer. You may view more of our activities on our Facebook page and YouTube channel as below: www.itsc.org.hk, www.facebook.com/ITSC.HK and www.youtube.com/CUHKKintec.

If you are a secondary student, you are welcome to join our activities by online application for ITSC membership through www.itsc.org.hk/chi/membership.html. By joining our membership program, most activities will be free of charge.