ENGAGE 程繫中大

SHARING FROM FRESH GRADUATES 2020

BME
Biomedical Engineering

PANG Cheuk Him Johnny

Electrical and Mechanical Services Department (EMSD), HKSAR Government

I joined the EMSD Engineering Graduate Training Scheme, which is a two-year training scheme recognized by the Hong Kong Institution of Engineers (HKIE). I have been given an opportunity to transfer to different divisions of EMSD and the Department of Health and learn to be a qualified biomedical engineer in the healthcare systems of Hong Kong. I have just finished my practice in the Department of Health about the regulation of medical devices. Recently, I worked in the Health Sector Division and handle the tendering of maintenance of biomedical equipment for public hospitals. I am lucky I could pursue my desired career in this field. I am glad what I acquired at CUHK BME could make this happens and apply the related knowledge and skills to my work.

Parth Thirumalai ANANTHANPILLAI

**Research Assistant, Active Biotech HK**

I recently graduated CUHK with a Bachelor's Degree in Biomedical Engineering. In the current job climate, it may seem daunting to find a job, especially with news of several companies instituting a hiring freeze. I eventually started working at a biotechnology company in HKSTP, and my work requires me to go to the lab/office to test equipment. Working life during these times is slightly different as I sometimes work from home, but my working hours are orthodox and flexible. The nature of my work keeps me engaged and occupies my mind in a good way. I am ultimately satisfied with working life currently as I work in an excellent job with a good environment that keeps me engaged and offers me opportunities to learn and grow both professionally and personally.

EE
Electronic Engineering

CHENG Foon Lok

Assistant Electronic Engineer, Porticos Asia Limited

I joined Porticos Asia Limited as an Assistant Electronic Engineer upon graduation at CUHK. My job is to develop technical solutions related to the hardware design and integration of Electronic Components to the products. To develop feasible technical solutions, a careful planning of the usage of Electronic Components and cautious sourcing of Electronic Components are essential for the initial Research and Development stage. I think this is an explicitly demanding job for me since the initial R&D stage defines whether there will be a practical product or not, and the hardware design is a major factor affecting the following stage. Thanks to my courses I studied in the EE Department, I am able to encounter numerous difficulties through the past hands-on experience during the Laboratory sessions.

CSE
Computer Science and Engineering

HUNG Wai Man

Co-founder, Flowclass

Hi, I am Raymond, one of the co-founders of Flowclass – an AI-powered platform for searching, comparing and booking tutorial service in Hong Kong. Thanks to funding support from CUHK and Cyberport, we launched mobile app in January 2021, and got featured by iMoney, SCMP and Metro Radio.

Our founding team, consisting of all CUHK students, were neighbours when we lived at the hostel. The years at CUHK has equipped me with the technical know-hows required to coordinate a full-stack solution with technologies including Flutter, React, MongoDB and more. More importantly, CUHK's hybrid mode of teaching brought me to design software that are scalable and user-oriented. I am now leading a 5-person technical team, while working closely with the marketing team to get user feedback in an agile way. We are excited about disrupting the education market and the experience at CUHK is what ignited our growth.

TAM Tze Ching Samantha

Assistant Hardware Engineer, Logistics and Supply Chain MultiTech R&D Centre (LSCM)

Thanks to the interdisciplinary nature of the Computer Engineering program which gives me the flexibility to learn in different engineering fields. This helps me to discover what I'm really interested in. I joined LSCM as an Assistant Hardware Engineer at the Research & Technology Development Section after graduation. My team is responsible for R&D tasks in sensor and wireless applications. We develop IoT based monitoring system according to the customer requirements.
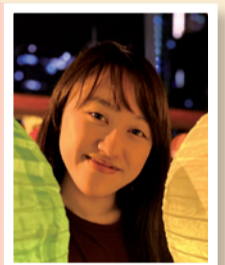
My role is to give assistance to firmware development, schematic and PCB layout design, and to prepare engineering prototypes. Unlike ordinary office work, my job often requires me to work outside the office. I may need to carry out site visits, outdoor testings, and on-site installations etc. I am so glad that I can work in such a great work environment that I don't feel bound here. I have room to think, to try, and to exchange ideas with other engineers in my team. And now, I'm looking forward to the outcome of projects that I have contributed to!
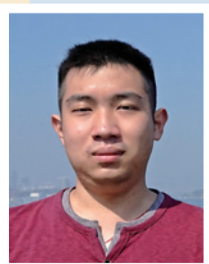
WONG Chi Wai

Assistant Engineer, WSP (Asia) Limited

After graduated from the EE department, I worked in a multinational consulting firm which provides consultancy service to buildings. I am undergoing the scheme A training program under Hong Kong Institute of Engineers in electronic discipline which is a fast track to become a chartered engineer in Hong Kong. My duty is to give advice to our clients on building service in electronic aspect. Thankfully, the syllabus in EE is comprehensive and equipped me with knowledge in every aspect of electronic engineering including circuit, optic, EM, etc. Apart from academic, my communication skill was greatly improved through the one-year internship experience in my year 3 which helps me a lot in the workspace.
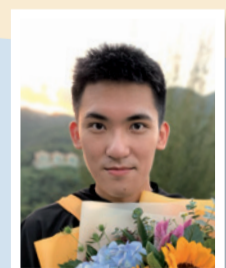
IE
Information Engineering

CHAN Ka Chun
Trainee, Société Générale

I joined the SRE team in Société Générale after graduation. My team is responsible for providing application support service to the front office. We manage the incidents and requests from the users and investigate the issue on the production site. We also measure the technical and functional performance of the system to ensure its reliability for business processes.

Working in a global investment bank has broadened my horizons as I've got the opportunity to work with talents from different backgrounds. Not only have I acquired knowledge in IT, say software development practice and architecture design of corporate-level applications, but also got exposure to the financial industry, such as the mechanism of structured products and regulations on trade.

This kind of experience could not be learned from school. I would like to express my deep gratitude to professors in CUHK who have taught me the courage and wisdom to be ready for the challenges ahead.

YIP Wai Shing
Consultant, EY

I am now working as a Consultant in Tax Technology and Transformation Team at EY. My team focuses on the use of information technology and data analysis tools to provide solutions to help enterprises reduce tax risk and improve the level of tax compliance. I have participated in Tax Governance Portal Implementation Project for a large Consulting firm.

My job is to perform system development and create a dashboard using Power BI. Besides, I have also participated in the Tax System Implementation Project for the largest bank in Hong Kong and performed the ETL process using Google Cloud Dataflow. Working at EY, I have the opportunity to develop my career through a broad scope of engagements, mentoring and formal learning. Also, I would like to thank IE for equipping me with rich IT knowledge, strong problem-solving skills and good communications abilities which have become the cornerstone of my career.

MAE
Mechanical and Automation Engineering

Lam Keng I, Natalie
Graduate Trainee, CLP Holdings Limited

It is my pleasure to share my experience working as a graduate trainee in CLP Holdings Limited (CLP) since August 2020. Working in CLP's power stations is challenging and also very fruitful and fulfilling. Over the past half year, I deeply understood the meaning of the saying 'there is no limit to learning.' As a graduate trainee, I have to assimilate a wide range of new knowledge and skills in a short period of time, from fundamentals of plant operation, to a specific understanding of equipment such as valve mechanism. Fortunately, the knowledge attained in undergraduate programme and exchange experience in Sweden during my study at CUHK well equipped me to start my career and allow me to quickly adapt to the engineering field.

During the CLP's 2-year training programme, we will rotate to different departments to familiarise with the business and operations of the company. Up to the present time, I had gone through training in operations team and maintenance team in the power stations, where I worked as a frontline operator to assist in startup and shutdown of generation units, and also participated in various maintenance and overhaul projects.

After joining CLP, I can see a bigger picture about the potentials and challenges being faced by energy industry and on renewable energy development in Hong Kong. The importance of work safety had also been deeply rooted in my mind. The training programme and working opportunity ignite my enthusiasm and make me be more proactive and passionate about my future career path. All in all, CLP is an ideal organisation to start career as an engineer, especially if you are interested in power industry.

SY Hiu Yin Emily
Graduate Trainee, ATAL Engineering Limited

I started out on my career in the Environmental Engineering Operation Department of ATAL Engineering Limited, listed on the Main Board of the Stock Exchange of Hong Kong. The company provides me with plenty of opportunity to participate in government projects such as testing and commissioning sludge dewatering equipment and disinfection facilities for San Wai Sewage Treatment Works, designing deodorization systems for Ha Tsuen Sewage Pumping Station and governing mechanical installation for Yuen Long Nullah Inflatable Dam and Low Flow Pumping Station. On-site work may be knackering but I love my work since it enables me to apply knowledge to maintain the daily operation of the society and protect the environment. Rotating to the Business Development Department is also fruitful that I understand financial and technical preparations in the tender stage. Under HKIE accredited Scheme A Training (MCL), the director reviews me every alternative month. Not only does he discuss wastewater treatment with me, but also emphasize engineering ethics. Thank you CUHK, particularly MAE, for nurturing me and hope the coming graduating students can find their way.
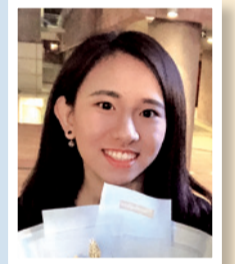
SEEM
Systems Engineering and Engineering Management

WONG Yin Ming Anson
Management Trainee, HKEX

Working in the most valuable exchange in the world is undoubtedly challenging, yet rewarding and full of possibilities. As a management trainee under the technology stream, I am managing several digital products' design and implementation. Across projects, I have always been leveraging my understanding in project management and system analysis acquired from the SEEM programme.

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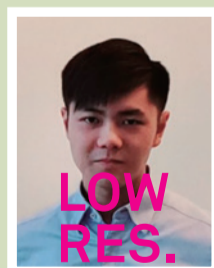
Thanks to the forefront vision and culture of the exchange, more advanced FinTech developments are in place for greater efficiency, effectiveness and robustness in the FS industry. Being part of this digital transformation trend triggers us to continuously improve. It is most satisfying to see how technology creates better experience to both investors and regulators globally.

YING Yau Kit Stanley
APAC Business Development Manager, Moonfare

After graduation, I am excited to join Moonfare, a rapidly growing digital investment platform. As a Business Development Analyst, I take care of clients in the region and support rolling out different go-to-market initiatives to expand our local presence. In this fast-changing environment, the ability to grasp and apply new business and technology concepts swiftly is a huge asset.

I owe my thanks to SEEM for laying a solid foundation for success. The learnings and training I received from SEEM have given me valuable insights into information systems, data analytics and investment science. Knowledge in these areas has not only prepared me well in understanding and communicating our financial products with clients but has also enabled me to effectively enhance business outcomes by deriving and understanding insights extracted from sales data.

OUTSTANDING STAFF/STUDENT ACHIEVEMENTS

A Novel Bioadhesive Hydrogel Demonstrating pH-independent and Ultrafast Solidification for the Treatment of GI Diseases

A research team led by Prof. Liming BIAN has developed a strongly bioadhesive hydrogel that can achieve the pH-independent and exceedingly fast in-situ gelation within 5 seconds. By collaborating with Prof. Philip Wai-Yan CHIU, an internationally renowned expert in gastrointestinal (GI) track endoscopic surgery, Prof. Bian's team demonstrated that such bioadhesive hydrogel can be used to effectively treat GI track diseases via the easy endoscopic delivery. The delivered hydrogel can remain adherent to the gastric ulcers under the harsh gastric environment for a protracted period to promote the healing of ulcers. This research work was recently published in a premiere scientific journal, Science Translational Medicine, a sister journal of Science.
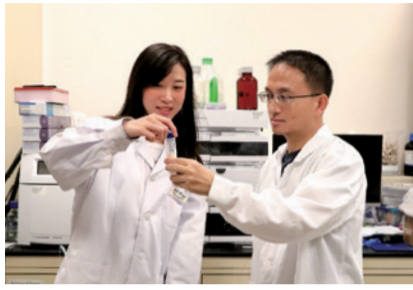
Dr. Xiayi XU (left) and Prof. Liming BIAN (right), Department of Biomedical Engineering

Advancing Digital Biomarkers for Alzheimer's Disease

A multi-disciplinary team of researchers from CUHK has been granted up to 5.6 million Hong Kong dollars to assist in developing machine learning technologies for advancing digital biomarkers for Alzheimer's Disease. This will contribute to the efficiency and accuracy of early identification using the state-of-the-art sensing and artificial intelligent (AI) technologies. The project is funded by the Diagnostics Accelerator program of Alzheimer's Drug Discovery Foundation (ADDF) and a matching fund from SenseTime Technologies (SenseTime). It is led by Prof. Guoliang XING from the Department of Information Engineering, Faculty of Engineering at CUHK, joined by local engineering and medical experts.

CUHK Computer Scienece Ranking

CUHK is ranked No. 11 worldwide and No. 1 in Hong Kong in Computer Science in the Best Global Universities Rankings recently announced by U.S. News & World Report 2021.

The Best Global Universities Ranking by U.S. News & World Report covers a total of 38 subject rankings and evaluated nearly 1,500 top universities across 86 countries using over 10 research performance indicators, namely number of publications and books, total number of citations, global and regional research reputation, and international collaboration. Across all the ranking indicators and weights, CUHK is listed No.11 globally and No.1 in Hong Kong with an outstanding score of 84 in Computer Science.

IEEE Richard W. Hamming Medal 2021

Prof. Raymond YEUNG of the Department of Information Engineering was selected as the recipient of the 2021 IEEE Richard W. Hamming Medal for his exceptional contributions to information sciences, systems, and technology. The award came with the citation for fundamental contributions to information theory and pioneering network coding and its applications.

IEEE Fellow 2021 Class

Prof. Pascal O. VONTOBEL of Department of Information Engineering was elevated to IEEE Fellow in 2021 class with the citation "for contributions to graphical models for channel coding". It is a great honor and prestigious recognition of his research achievements and contributions.

RGC Early Career Award 2020/21

Prof. Changhong ZHAO of the Department of Information Engineering was honored a recipient of Early Career Award 2020/21 by the Research Grant Council (RGC) for his project titled "Optimizing Multiphase Power Flow via Exact Convex Relaxation and Distributed Feedback Design". The project aims to develop a fast and scalable method to solve the fundamental and challenging optimal power flow (OPF) problem for operating a power network integrated with a large number of distributed energy resources.

ASME Adaptive Structures and Material Systems Award

Prof. Wei-Hsin LIAO won the 2020 Adaptive Structures and Material Systems Award by the American Society of Mechanical Engineers (ASME). The award recognizes significant contributions to the sciences and technologies associated with adaptive structures and material systems through research, education and technology transfer. Professor Liao is the first Hong Kong recipient of this award.
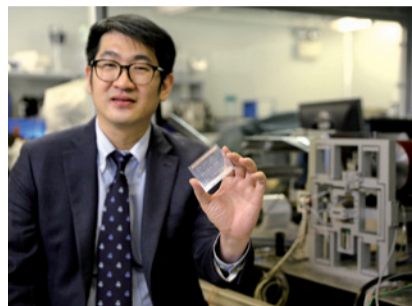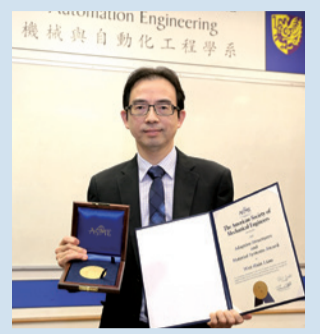
Innovation Award by the China Association of Inventions

Prof. Shih Chi CHEN received an innovation award from the China Association of Inventions, which recognizes his outstanding research, invention, and successful commercialization (Nano-Builder) of new 3D printing technologies.

Recently he has developed a flexure-based multilayer roll-to-roll (R2R) printing system that simultaneously achieves nanometer-level printing resolution and submicron-level overlay accuracy, enabling mass production of high resolution flexible electronics at low cost. The research result has been recently published in the journal Precision Engineering.

Novel Microrobotic Diagnostic System to Accurately Diagnose Infectious Pathogens with Full Automation and Low Cost

CUHK has developed a fully automated, low cost and rapid microrobotic diagnostic system with comparable sensitivity and specificity to clinical detection methods. The research team is now studying the application of this microrobotic system for multiple pathogens including the COVID-19. This system has been developed by a collaborative research team led by Prof. Li ZHANG, Associate Professor, Department of Mechanical and Automation Engineering, Prof. Margaret IP, Professor,

Department of Microbiology, Professor Joseph SUNG, Mok Hing Yiu Professor of Medicine and Director of the Institute of Digestive Disease, and Professor Sunny WONG, Associate Professor, Department of Medicine and Therapeutics.

## Fellow of the Association for Computational Linguistics

Prof. WONG Kam Fai, Associate Dean (External Affairs) of the Faculty of Engineering and Director of the Centre for Innovation and Technology), CUHK has been named Fellow of the Association for Computational Linguistics (ACL) in the class of 2020, in recognition of his significant contributions to social media processing, particularly in Chinese information retrieval, opinion mining, microblog processing and rumour detection.

Established in 2011, the ACL Fellows programme recognises its members whose contributions to the field of computational linguistics have been most extraordinary in terms of scientific and technical excellence, service to the association and the community and/or educational or outreach activities with broad impact.
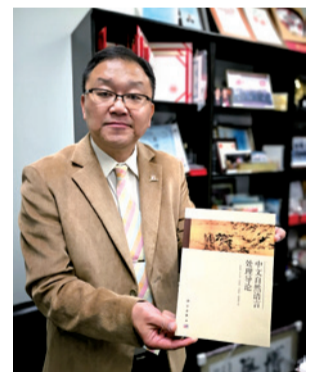
CUHK and University of Warwick Develop T-rays Technology To Analyse the Skin Conditions and Structure
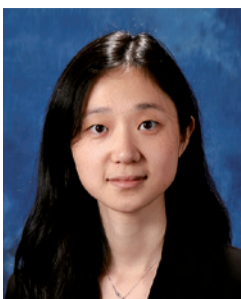

Scientists from the Faculty of Engineering at CUHK and the University of Warwick have developed a novel method for analysing the structure of skin using a type of radiation known as T-rays. It could build a more detailed picture of the structure of an area of skin and how hydrated it is than current methods allow, and help improve the diagnosis and treatment of skin conditions such as eczema, psoriasis and skin cancer. The finding has been reported in Advanced Photonics Research.
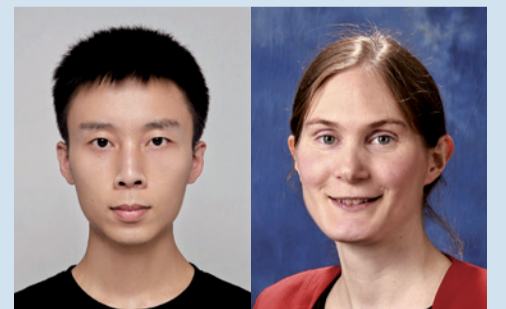
Dr. Xuequan Chen, the study's first author and post-doctoral fellow from the Department of Electronic Engineering at CUHK, and Professor Emma Pickwell-MacPherson from the Department of Electronic Engineering at CUHK and the Department of Physics at the University of Warwick.

China's Excellent Young Scientists Fund 2020

Prof. ZHAO Ni has been awarded China's Excellent Young Scientists Fund 2020. She has been developing scientific approaches to reveal the structure-property correlations in organic, hybrid, and nanostructured composite semiconductors, and applying the fundamental findings to the development of practical optoelectronic and biomedical devices. In the proposed research, She aims to establish a multidisciplinary research area that focuses on integration of organic and perovskite-based device technologies to enable a compact, low-cost and accurate sensor platform for continuous monitoring of vital signs and early detection and classification of cardiopulmonary disorders.

Innovation and Technology Student Club
創新科技學生會

INNOVATION AND TECHNOLOGY STUDENT CLUB

Google PhD Fellowship 2020

Mr. SHI Shaoshuai, a EE PhD student co-supervised by Prof. WANG Xiaogang and Prof. LI Hongsheng has been awarded 2020 Google PhD Fellowship. 2020 Google PhD Fellowship is to recognize and support outstanding graduate students who seek to influence the future of technology by pursuing exceptional research in computer science and related fields. A total of 55 recipients in all computer science-related fields are selected globally this year. SHI Shaoshuai is the only awardee in Hong Kong.

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 May 2009, 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, HKSAR. Our booth exhibited our anniversary celebration activities. We also designed two online STEM games to engage public. The games were challenging as players had to calculate fast for winning the prize. We had a total of 14 big prize winners.

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 (中大賽馬會「智」為未來計劃) ("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 guarding 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 events and activities. 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 HKSAR Government Secretary for Education, Mr. Kevin YEUNG Yun-hung JP, CUHK Pro-Vice-Chancellor Professor Isabella POON, 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.

For more details

ITSC Games front page for InnoCarnival 2020

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Game 2: with given numbers and operators, the player must make up the calculation to result 24, winners must finish level 1, 2, and 3

Big Prize Winner, also ITSC member, after receiving our big prize Bluetooth headphone thru SF delivery to her home

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 STEM tutors team: they are planning and studying about 3D printing

This bicycle is made by the 3D printing pen

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/CUHKcintec**.

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.

Project Announcement Cum Secondary School Think and Create Competition 2020 Awards Presentation Ceremony officiated by Secretary of Education Mr Kevin YEUNG (right-top), Executive Director, Charities and Community of The Hong Kong Jockey Club, Mr. Leong CHEUNG (left-bottom) and Principal Investigator of the Project Professor Yeung YAM (right-bottom)

Winners of Secondary School Think and Create Competition 2020: St. Paul's Convent School (left-top), Lai King Catholic Secondary School (right-top), Diocesan Girls' School (left-bottom) and Pui Ching Middle School Macau (right-bottom)