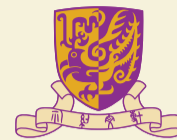


ENGAGE 程繫中大

Faculty of Engineering, The Chinese University of Hong Kong Special Edition March 2016
<http://engage.erg.cuhk.edu.hk>  [facebook.com/cuhkengge](https://www.facebook.com/cuhkengge)



Faculty 25th Anniversary Special Edition Good Old Days



Prof. Leung Kwong Sak

Department of Computer Science and Engineering
Engineering Anecdotes

Happy 25th birthday to Engineering Faculty! I am proud of witnessing and participating in the birth process of a great Engineering Faculty 25 years ago and its rapid growth in quality and size since. Prof. Charles Kao, a Nobel laureate and our former Vice-Chancellor (VC), had the vision of forming a unique Engineering Faculty with modern and futuristic programmes. He initiated the establishment of the Faculty and chaired the Planning and implementation Committee. He once told me: "KS, when you are starting on a new project, you should do the thinking first before doing the survey which will distract you from the very original thinking and ideas."

Prof. George Fan, a former top executive from IBM, was appointed as the Administrative Dean of Engineering Faculty. It is not surprising that we found him ultra-efficient. Not too many people know how much we spent on our first Engineering network (with workstations). The answer is HK\$15 million, which was a lot of money then. Where did the money come from? It was the total amount of money given to us as the initial start-up fund for the new Faculty. George said: "Spend it all on an excellent network. I'll go get some more (money) from VC!"

Many of us can still remember Prof. Omar Wing, our founding Dean, well. Omar actually set a very solid foundation for our Faculty. He has set up a set of good guidelines some of which are still in use today in the Faculty. He had been chairman of Department of Computer Science and Engineering for two years concurrently.

Life is going in cycle. We started with individual programmes, tried integrated engineering, which was then disintegrated and now are back to broad-base admission. You may not have noticed that the superstructure framework of our Engineering Building Phase I, is outside of the building for extension purpose. But we have been growing so fast that we have a brand new Phase II Building instead of extending the Phase I building. I have also witnessed and experienced the moving targets (upward moving evaluation standards for teaching and research) phenomenon of the Faculty. However, the new colleagues may be glad to hear that I used to teach 5 senior courses/year when I first joined CUHK.

Prof. Lu Yi Chun

Department of Mechanical and Automation Engineering

I am deeply grateful to have encountered many devoted and inspiring teachers/mentors in my life, who have taught me to fully devote myself to what I do and to strive for excellence. They have made me see that I have unlimited potential to make my dreams come true and to create value for society.



In my teaching I devote myself to equipping students with strong critical and analytical skills, to building their competence in engineering fields and to inspiring them to pursue their dreams. I believe that enabling students to see and appreciate the rationales behind the theory is as important as the actual content itself. I always ask myself what I appreciate the most from my teachers and what I wish to have learned from my teachers. I believe that building personal bonding with each student, truly believing in their potential and caring about their happiness as human beings are essential for teaching and education.

Last but not least, I want to share a message from my life mentor, Daisaku Ikeda, who is a philosopher, peace-builder and an educator. "Education is a process of stimulating and awakening people from the very core of their being, enabling them to unlock and develop the power within them to create happiness." – Daisaku Ikeda (Daily Encouragement)

Prof. Tsui Hung Tat

Department of Electronic Engineering

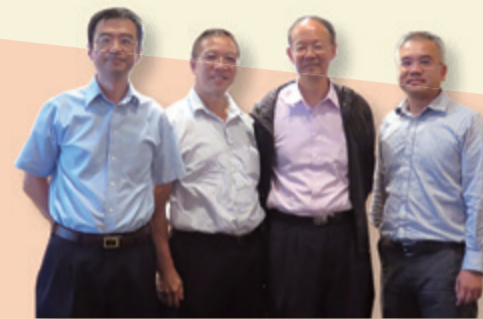
In the early years, the number of students was relatively small. All classes were in fact elite classes.

At that time, the local industries were taking off. Quite a few of our graduates chose to start up a company. On average, there were more than 3 or 4 such graduates every year.

These include some well known entrepreneurs like Ricky Wong and Sampson Tam. We also have successful entrepreneurs overseas. Most of them are in North East USA and Silicon Valley. In the early 80s, many HK industries began to move to China. The opportunities to start up a company were gradually reduced. In the early 90s, the number of students increased significantly, but the number of entrepreneurs was getting smaller. For the whole of the 90s, due to changes in society, Electronic and related departments increased significantly in the universities in Hong Kong.

We saw a rapid development of Internet technology applications. This trend continues today. Many colleagues of our department downloaded some teaching materials from the web to improve preparation work. Often, some of our research students could find experimental data from the web. However, we have many different research topics and many of them need to perform real experiments. During this period, the number of local graduate students decreased significantly. On the other hand, graduate students from mainland China increased rapidly.

The world changes with time. It is very popular for people to start up a company by taking advantage of Internet technology. Also, the cost to do this seems not too high. In the past 20 years, a weak point of the universities in Hong Kong has been the lack of sufficient entrepreneurs. How to improve on this should be a direction of our effort.



Visiting three EE alumni who are successful entrepreneurs in Washington DC last summer

Dr. Adonis Fung Pui Ho

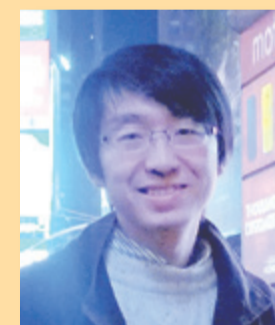
Graduated in BEng of Information Engineering in 2008 and PhD in Information Engineering in 2015
Part-time Lecturer, Department of Information Engineering
Currently a Security Engineer at Yahoo!

This is an extraordinary 25th anniversary year for the Faculty of Engineering, CUHK. In a relatively short period of time, the people and the Faculty has been recognised for being at the forefront of cutting-edge research, and aspiring to cultivate generations of passionate and professional graduates for high-tech industries.

Throughout the last ten years I have always been heartened by the vitality and energy here. I began my journey in the Department of Information Engineering as a summer intern, completed my bachelor degree and all the way up to my doctorate degree in the same department. In addition to numerous chances including scholarship and exchange nominations given here, I am very grateful and most humbled for having the precious opportunity to share my knowledge with the younger fellow students, as a part-time lecturer.

Being part of this place has been a lifetime of fulfilment. I owe my deepest gratitude to my PhD advisor, the wise Prof. K. W. Cheung. Under his guidance, I received plenty of freedom, support and wisdom to explore, identify, and drill into solving some important research problems. I was always enlightened by his vision and inspiring stories. With wisdom derived from the Holy Scriptures, a judicious dose of his caring words would always come to empower me to regain my strength. I carry this faith and wisdom wherever I go, in my current workplace at Yahoo, and of course I bring it back to classrooms to make the feedback loop complete.

Students are essential to our Faculty's spirit. I have witnessed students who first enrolled as young freshmen, who have matured as graduates and joined the job market (e.g. Amazon, Google, local big names) and research institutes all over the world. I treasure being part of their lives studying here, and I wish them to uphold all the vital qualities including ethics, integrity, and critical thinking in their future endeavours.





Prof. Chan Siu On

Department of Computer Science and Engineering

I graduated from the Computer Science Programme here, after which I spent several years doing research in the US and Canada, before coming back to CUHK. My research area, Theoretical Computer Science, was not very popular in CUHK ten years ago with only a few professors like Prof. Cai Laizhen working in this area at the time, although of course there were visiting scholars and seminars. The situation has greatly changed and this area of study has grown rapidly since Prof. Andrew Yao set up the research centre, employing many good professors from various different countries like India, and Macedonia. They are enthusiastic on research, encouraging and challenging in equal measure. Over the years we have invited visitors, arranged seminars and conferences, all with a view to fostering a culture of inquiry through sound research, and so educating first-rate post-graduate students.

In recent years, more and more CUHK graduates have attended the meeting on "Theoretical Computer Science". Some of them have even won awards. Prof. Yao hoped that CUHK would rank first throughout Asia in "Theoretical Computer Science".

I participated in the ACM programming contests when I was studying Computer Science in CUHK. The CUHK ACM programming team grew very fast and successfully after I graduated, thanks to the leadership of Prof. Lau Lap Chi. The ACM team beat MIT and Tsinghua University, and ranked the 8th in the World Finals in 2012. The ACM team not only did well against competitors, but also secured great job opportunities in the large companies. Some team members are now working in Google/Alphabet, Facebook, Apple Inc., or have started up their own businesses in Hong Kong or Silicon Valley.

The Faculty of Engineering has achieved some remarkable success in these past twenty five years and I am confident the Faculty will continue to flourish academically and attract great engineering students in future.

Mr. Martin Tsang

Graduate of Department of Electronic Engineering
Currently Co-Founder of EV Power Group



The occasion of the 25th anniversary of the Faculty of Engineering, CUHK and the beginning of a prosperous 2016, arouses my yearning for my campus days and my memory of friendships. Here, I would like to send my best regards and greetings to the Faculty, alumni and students!

Ten years ago, during my internship in Motorola concerning integrated circuit application, not only did the work itself help me understand the structure of the smart phone, image transmission, USB, memory and other original work, but it also helped me appreciate the link between the knowledge gained at college and the practical application of that knowledge through handling the various problems encountered in the workplace.

I was able to then take my internship experience of mathematics and image processing technology and translate it into the graduate research project that brought me many prizes. Many people encouraged me to use the fruit of my research to seed a new business opportunity and make something different. A year later, I partnered with Laurence Chan (also an alumnus of the Department of Electronic Engineering), and we started the "EV POWER Group", the electric vehicle charging service company. In 2014, the company extended into the mainland, and so far has operations in Shanghai, Beijing, Guangzhou and Shenzhen. We have built 800 charging stations with more than 3000 charging piles, with charging points situated in office buildings and shopping malls, such as Beijing Mineral Plaza, Shanghai Hong Kong Plaza, Guangzhou Gold Land and Shenzhen KK100 COCOPARK. In 2016, we are going to achieve no less than 50,000 charging piles servicing tens of thousands of domestic electric car users.

I firmly believe that with the attention and support from alumni, the joint effort of all the teachers and students, the future of the Faculty of Engineering is bright and the school will write a new chapter of outstanding achievement!



Miss Leung Yun Yee

Postgraduate student, Department of Mechanical and Automation Engineering

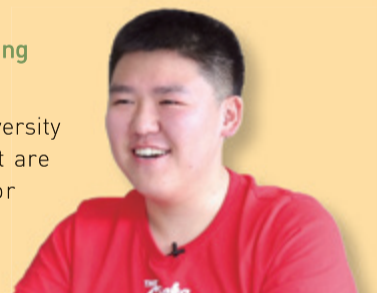
I chose to study engineering because as a secondary school student I had taken a subject called Design and Technology. This subject had a profound effect on my life and opened my eyes to the possibilities of innovation and engineering. With it I learnt something practical related to engineering and made use of this knowledge to invent things to help others. Those inventions garnered me more than 20 awards. The Design and Technology subject and the awards I won encouraged me to be an engineer.

I was lucky to be the very first member of the Innovation and Technology Student Club which was established by the Centre for Innovation and Technology (CINTEC), Faculty of Engineering, CUHK, together with the Innovation and Technology Commission. So, as a Form Five student, I was given a chance to work as a summer intern with Prof. Yam Yeung and his postgraduate student Josh Lam Hui Man, improving my invention. This was my first real exposure to engineering and I was impressed by the research environment of the Department of Mechanical and Automation Engineering, CUHK. I am so thankful for this opportunity that sharpened my research skills and honed my invention.

With this extremely rewarding summer internship experience, I was determined to make the Department of Mechanical and Automation Engineering my first choice in my JUPUS application. Studying engineering in the CUHK is a delightful journey. I have learnt a lot and become a better problem solver.

Mr. Yin Ming

Graduate of Department of Information Engineering
Currently CEO and founder of Start-up "Xitu"



People have different memories about their university life, but the computer labs of each department are definitely the most unforgettable aspect for me. In CUHK, most of the Faculty's computer laboratories are open year-round, except from several official holidays.

I can still remember the first time I stepped into the lab of the Department of Information Engineering. The lab is big, light and spacious, in which about one hundred desktops are arranged line by line. Students of upper classes sit in groups, typing code in front of monitors, while others are discussing projects and assignments. Everything in that room made me excited and it was also the first time I felt I was an engineer.

While in the lab, students work on their assignments, read notes, watch videos, play games or just browse some latest news online. To me, it is not only a place of computers but a kid's room full of toys. And with these toys, I can create new things with the knowledge I learned in class and information I can find online, such as programmes, websites and mobile applications. I spent plenty of time in the lab, searching, exploring and learning, just as if I had unlimited lego bricks to play with. The lab is not simply a place of homework, a place to acquire knowledge, it also makes a perfect environment for creative work. As it does not close at night, nothing can stop us from working on our ideas. Even after my college life and starting my own business, I still miss that almost chemical reaction, that frisson, that thrill in the lab in which I can focus on my work and never stop.

After 25 years of the Faculty of Engineering, many people have fond memories of the labs and I hope all graduates can recall those memories. Be creative and work hard.

CUHK Received Winners' Cup at National Challenge Cup Competition

CUHK students swept top awards in the 14th Challenge Cup held at Guangdong University of Technology, and won the Winners' Cup, the second top prize of the competition, beating more than 300 participating universities with over 780 projects from mainland China, Hong Kong and Macau. CUHK was the only institution from Hong Kong to receive such an award since the competition accepted participation of Hong Kong tertiary institutions in 1997.

As a bi-annual national competition, the Challenge Cup is known as the "Olympics" for promoting innovation in social science, science and technology among university students in China. In the past, CUHK had already won the Hong Kong and Macau Cup 6 consecutive times. This year, Hong Kong teams joined the national competition to compete with other mainland university finalist for the first time. CUHK won the Winners' Cup this year.

List of the winning engineering projects and awards

Name of Project	Name of Student	Affiliated Department	Name of Award
Sign Language Educator – Vision Aid Sensor Glove	Lai Jintao, Tang Ding, Chen Bowen, Zhong Zhuowei	Department of Computer Science and Engineering	First Award
Semisolid Vanadium Redox Flow Battery	Wang Zengyue	Department of Mechanical and Automation Engineering	First Award
Miniature Environment-Friendly Tadpole Robot for Capsule Endoscope to Examine the Entire Gastrointestinal Tract	Zhong Yong, Zhang Lin	Department of Mechanical and Automation Engineering	Second Award
Mechanical Energy Harvested Damper	Chu Ki Sum	Department of Mechanical and Automation Engineering	Second Award
Hollow-Core, Porous-Shell, Spindle-Like Fe3O4 Nanocapsules for Controlled Drug Delivery	Chan Kai Fung	Department of Mechanical and Automation Engineering	Second Award
Wearable Exoskeleton Suit for Paralyzed Individuals	Ma Hao, Chen Bing, Qin Laiyin, Guan Xiao	Department of Mechanical and Automation Engineering, Department of Orthopaedics and Traumatology	Second Award
R-Guardian Anti-lost System	Kuo Wai Keung, Lau Pak Lam, Cheung Wai Lam, Chung Yiu Ting	Department of Information Engineering	Third Award



Esther Leung Yun Yee (1st right)

Prof. Michael Lyu Conferred ACM Fellowship 2015

Prof. Michael Lyu Rung Tsong has been elected Fellow by The Association for Computing Machinery (ACM) - an authoritative international engineering organisation - for his remarkable contribution to the theory and practice of software reliability engineering. This year, 42 are named ACM Fellows worldwide and Dr. Lyu is the only one from Hong Kong. ACM fellowship is the organisation's most prestigious membership grade which only the top 1% of its members fulfils the strict criteria to receive.

Since the establishment of the ACM Fellows programme in 1993, only a few Hong Kong scholars have received the honour, all of them top computer scientists. With Dr. Lyu newly elected, the total number of ACM Fellows in CUHK has risen to 4.



Computer Science Students Shone at the Samsung "Solve for Tomorrow 2015"

An energetic student team formed by Ip Kar Shun, Si-tou Shun Kit, Leung Man Ho and Lam Wai Kwan won the champion in "Samsung Solve for Tomorrow" app development competition. The objective of this competition is to develop an app that would serve as a training tool for children with ADHD.



Project: GalaxyMaze - Unleashing Children's Potential

GalaxyMaze is a game targeted at ADHD kids. The simple and intuitive game is designed to train their three major weaknesses - inattentiveness, hyperkinesia and weak short-term memory.

The core objective is simple. Players have to guide the marble through the maze by tilting their devices to finish their mission. To provide the best to ADHD kids and their parents, we have included dozens of tailor-made features like health lock, hints, tutorial mode, replay mode, reward system, and an attractive and yet relaxing user interface.

Engineering Students Won Design Award



Lai Kin Wa (1st left), Chan Tsz Fung (2nd left), Yip Chun Wa (2nd right) & Chow Kwok Sum (1st right)

Five students from the Department of Mechanical and Automation Engineering joined the 1st Cross-straits Four Regions & Academic R & D Achievements Exhibition in Changping, China in August 2015. Students were required to build a line-following and obstacle-avoiding robot in the competition.

Under the supervision of Mr. Yip Chun Wa, students Chow Kwok Sum and Lai Kin Wa received the Best Innovation Award in the obstacle-avoiding event. Besides, Lee Chun Kong and Chan Tsz Fung won the Champion and the Best Building Award in the line-following event.

Engineering Alumnus Selected as One of the Ten Outstanding Young Persons by JCIHK

Dr. Alan Lam Hiu Fung was selected as one of the Ten Outstanding Young Persons by the Junior Chamber International Hong Kong in October 2015 for his innovation awards earned in international and regional technological competitions as well as his passion to promoting youth entrepreneurship.

Dr. Lam received his BEng, MPhil and PhD degrees all from the Department of Mechanical and Automation Engineering at the Chinese University of Hong Kong.



Prof. Jianwei Huang Elected IEEE Fellow 2016



Prof. Huang Jianwei has been elected Fellow of the prestigious Institute of Electrical and Electronics Engineers (IEEE) in 2016 for his contribution to resource allocation in wireless systems. This year, 297 scholars were elected IEEE fellows worldwide, and 2% of them are below 40 years old. At the age of 37, Professor Huang is the youngest among the three newly elected IEEE Fellows from Hong Kong this year.

The IEEE Fellow is one of the most prestigious honours of the IEEE, and is bestowed upon a very limited number of Senior Members who have contributed importantly to the advancement or application of engineering, science and technology, bringing significant value to our society.

Prof. Jonathan Choi Received a Croucher Innovation Award 2016

Prof. Jonathan Choi Chung Hang received the Croucher Innovation Award 2016 worth HK\$5 million. He is the first ever recipient from CUHK since the inauguration of this award by the Croucher Foundation in 2012. Prof. Choi's research interests lie in drug delivery, molecular diagnostics, "bio-nano" interactions, bionanomaterials, and biological imaging.

The Croucher Innovation Awards aim to identify a small number of exceptionally talented scientists from all countries working at an internationally competitive level and to offer substantial support to these "rising stars" at a formative stage in their careers. This scheme is designed to enable recipients to pursue their own scientific, intellectual and professional inclinations, to advance their expertise, to engage in bold new work, and to contribute to the development of education and research in Hong Kong.



Female Student Received APAC Google Anita Borg Scholarship and Outstanding ICT Women Award 2015



Esther Leung Yun Yee (1st right)

As a scholarship recipient of the Google Anita Borg Memorial Scholarship, I was invited to join Google Scholars' Retreat at the Google Shanghai Office. The purpose of the Scholar's Retreat was to recognise recipients' hard work and achievements in computer science and related fields, as well as to provide them with a networking opportunity with Googlers and other scholars from all over the world. The agenda was filled with panel conferences, development sessions, networking and fun activities. The aim of the retreat is to empower a group of female undergraduate and graduate students in technology to be leaders in the future who can in turn inspire other students in their own communities. After meeting with so many talented female students and successful female engineers in Google, I believe that both genders have an equal chance to contribute society and make use of our talent in all areas.

"Outstanding ICT Women Awards 2015" (OICTWA), the first award recognising and applauding women's contribution to and innovation within the ICT industry was launched by FACE Club



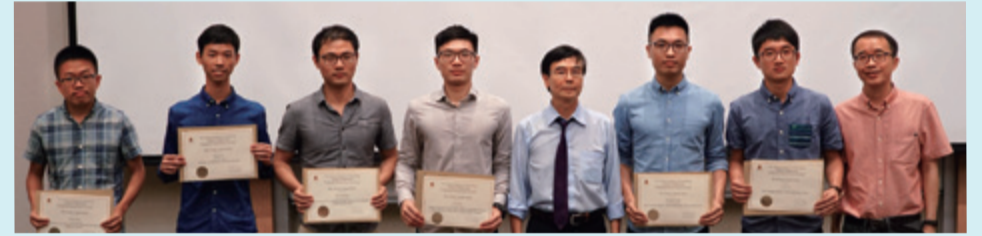
which is established by the female members of Hong Kong Computer Society (HKCS). The award is divided to two categories: "Outstanding ICT Woman Professional" Category for female professionals and practitioners and "Outstanding ICT Super Girl" Category for female secondary and tertiary students. I am honoured and excited to be selected as a Super Girl of the HKCS Outstanding ICT Women Awards 2015. It recognises my development, growth, contribution and achievement related to ICT over the years, and I strongly believe that the award is a great encouragement and support to girls to engage in the ICT sector.

Undergraduate Summer Research Internship 2015

The Faculty of Engineering has launched the Undergraduate Summer Research Internship programme to support its students to undertake a research project under the supervision of professors during the summer break. This programme gives student exposure to research environment and grooms them for graduate studies and oversea summer research schemes. A maximum of HK\$10,000 is granted to each student for completion of their research project.



Group photo



The recipients of best project awards with the Dean and Prof. Michael Cheng

Female Engineering Student Won International Best Paper Award



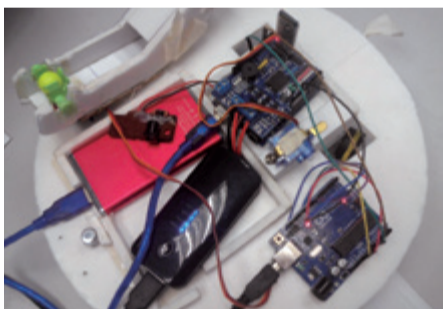
"It is a remarkable experience in my life to have such a great honour. I never thought that I could win the Best Paper Award among numbers of scholars in the Asia Pacific Region. With this precious experience, I believe anyone can achieve unimaginable success once they devote themselves wholeheartedly to achieving their goals." Lau Ming Wai, a final-year undergraduate student in Electronic Engineering in CUHK said.

Laura Lau Ming Wai won the Best Paper Award in the special session (Women in Engineering) in TENCON 2015. TENCON is a premier international technical conference of IEEE Region 10, as the Asia Pacific Region is known, one of the largest regional organisations of the IEEE. There are a number of submissions to the special session of Women in Engineering in TENCON this year. Judged on the quality of their papers, only three candidates were selected to give presentations in the special session for the Best Paper Award. The candidates included an assistant professor at PESCE, Mandya, a professor at LBS College of Engineering, and Lau Ming Wai.

INNOVATION AND TECHNOLOGY STUDENT CLUB



"Innovation and Technology Student Club" (ITSC) is jointly set up by the Faculty of Engineering, CUHK and Innovation and Technology Commission (ITC), with a mission to nurture young talent to become future technology elites. Since 2009, we have recruited around 1500 secondary students with similar interests in science and engineering.



1st trail run shooting robot (not sure about the name)



Our final shooting robot during InnoCarnival 2015



Our beautifully designed mockup of the 7-storey old Hong Kong building



ITSC booth at InnoCarnival with the theme of old Hong Kong



During the last day of InnoCarnival 2015, the crowd queue for a last chance for a big prize.

From 31 Oct 2015 to 8 Nov 2015, ITSC had a booth for the InnoCarnival 2015 organised by ITC, HKSAR in Hong Kong Science Park, Shatin. The ITSC organising committee started planning the event since summer 2015. A few members with a strong interest in robots formed a small team of "Research & Internship". They designed and created a shooting robot with blue tooth control. One of our committee members - Hugo - came up with the idea of an old Hong Kong Hawker throwing "olives" to the clients at 7-storey building. We decided to set the booth with theme "old Hong Kong cross over technology". After the theme was set, we searched out many different old fashion toys as gifts for game players. Under consultation and hands-on teaching by Department of Mechanical and Automation Engineering, our team spent many days in making of the "olive-shooting" robot. With the attraction of our old Hong Kong setup and toy gifts, parents and kids happily queued up to play for a chance to win our big prize.

In 2016, ITSC will have many activities for our members. The following are some confirmed:

- Technology Visit: Hong Kong Aircraft Engineering Company Limited (HAECO)
- Supporting Hong Kong Science Festival 2016, the Department of Computer Science and Engineering is organising a mobile apps competition with theme of "Apps designed for students, by students".
- ITSC Year End Ceremony
- Exchange Camp in April
- Another workshop for Hong Kong Science Festival 2016 of "Programming and Playing with Intelligent Robots": intensive 2 Saturdays full day's workshop in April

ITSC is planning a variety of activities like Technology reporter, research internship, technology ambassador, summer camp, workshops from March and throughout the summer. You may view more of our activities on our Facebook website and YouTube channel as below: www.facebook.com/ITSC.HK and www.youtube.com/CUHKcintec.

If you are a secondary student, you are welcome to join our activities by applying to become a member through <http://www.itsc.org.hk/chi/membership.html> online. By joining our membership programme, most activities will be free of charge.

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