



SHARING FROM WORK-STUDY STUDENTS IN 2018-19

Through the work-study programme, engineering students can gain valuable experience for their future career development. The Faculty has initiated a Placement and Internship Programme since 1975. Some students take the option of a one-year industrial full-time placement before they continue their final year of study. They will be engaged in a supervised training in an organization normally for a period of 12 months.

EE

Electronic Engineering

Wong Chi Wai

MTR Corporation Limited

I joined a one-year internship in MTR Corporation Limited through the university's work-study programme. I worked as a full time staff in MTR for one year before I continued my final year of study. The service scopes of MTR covers heavy rail, light rail and feeder bus in general. Engineer projects include maintenance and management in rolling stock, overhead line, rail track and signalling system. During the internship period, I did not only learn about railway engineering, but also had the chance to compete in IET YPEC - Young Professionals Exhibition & Competition (IET YPEC 2019) as a MTR representative. This experience gave me a wider overview of the engineering industry and hand-on experience in different engineering areas.



Yung Yat Wang

Sierra Wireless

I am glad to join the work-study program. Comparing to having a part-time job, being a work-study student was totally a different experience.

First, you have to work full time in a company for one year; you have to work with your colleagues; and most importantly, you could not give up or just quit the job. It could significantly improve your ability to handle pressure and build up your communication skill set.

Second, having a job which is related to your profession can benefit your study in many ways. You can know more about what you can do in the future, and what your strength and weakness lie in your profession during the internship. It could even better prepare you for the competitive job market before you really graduate and look for a job.



MAE

Mechanical and
Automation Engineering

Pau Long Wai

CLP Holdings Limited

2019 has been a fruitful year, with a wide variety of activities and projects delivered. Initially, I lacked the experience and knowledge of asset management in power industry. Through the continuous guidance and comments from my supervisor and colleagues, I began to develop my technical skills to meet the expected deliverable from various tasks.

Working in group level provided me many opportunities to see the business in a broader view, setting up Operation & Maintenance of upcoming power stations, after studying in both CLP's and international standards and learning from practice on preceding work.

The biggest challenge was to work on engineering in terms of management. I had to always prioritise the performance and growth of business of the company. This programme has developed my technical skills, along with different business strategies. Wherever I work in the future, all knowledge and experience got this year will benefit my life forever.



CSE

Computer Science
and Engineering

Pan Ziyi

PwC

I have learnt much in my placement during the past year in PwC as a consulting intern. To be honest it was not my original plan. When I looked for a placement, I was considering something closely related to my major programme. But it turned out that I made the correct decision and I truly benefited a lot from it.

The life in PwC was challenging yet fruitful. During the first six months of my placement, I had the chance to engage in a project about implementing a marketing platform for a corporate client. For the first time, I got the chance to observe how the whole things work behind an accounting firm, and be involved as a part of the team. My coach offered me many chances to learn by practice. I coded a bit, did meeting minutes, drew slides and designed a presentation. The best part was that what I did really mattered in making a project complete and successful.

Through my placement, I also learnt other things besides from technical skills or soft skills. I learnt the importance of being a professional. It was one's detail-oriented attitude that makes things different and I want to bear in mind and apply it in life.



Engineering PhD Student Received the First Place in ACM Student Research Competition

Mr. Gengjie Chen, a PhD student under the supervision of Professor Evangeline F. Y. Young at the Department of Computer Science and Engineering has taken First Place in the Association for Computing Machinery (ACM) Student Research Competition Grand Finals, with the research project themed "VLSI Routing: Seeing Nano Tree in Giga Forest". Mr. Chen received the award recently at the annual ACM Awards Banquet in San Francisco, where the prestigious Turing Award (also recognised as the Nobel Prize of Computing) for this year was also presented.



Computer Science & Engineering Students Won Excellent Results from ICPC World Finals

The programming team from the Department of Computer Science and Engineering won a bronze medal at the 43rd Annual World Finals of the International Collegiate Programming Contest (ICPC) held in Porto, Portugal. The team consists of three undergraduate students: Yik Wai-Pan (Computer Science major), Ho Ngan-Hang (Computer Science minor, Mathematics major), and Poon Lik-Hang (Computer Science minor, Quantitative Finance major). This is the third time CUHK has won medals at the ICPC.



Ultrafast Multi-focus 3-D Nano-fabrication Based on Two-photon Polymerization



The research article by Prof. Shih-Chi Chen Ultrafast multi-focus 3-D nano-fabrication based on two-photon polymerization is published in Nature Communications last month.

Prof. Chen's team presents a revolutionary laser nanofabrication process based on TPP and an ultrafast random-access digital micromirror device (DMD) scanner. By exploiting binary holography, the DMD scanner can simultaneously generate and individually control one to tens of laser foci for parallel nano-fabrication at 22.7 kHz. The nanofabrication system may be used for largescale nano-prototyping or creation of complex structures, e.g., overhanging structures, that cannot be easily fabricated via conventional raster-scanning-based systems, bringing significant impact to the world of nanomanufacturing.

BME Research Team Develops a Novel Method for Preparing Single Chain Nano Material

Professor Liming Bian, Associate Professor of the Department of Biomedical Engineering and his research team have recently developed a novel method for preparing single chain nano material which significantly improves the efficiency by a factor of 20 over that of conventional methods. The research team further investigated the impact of the dynamic molecular conformational change in such material on cellular interactions in different biomedical applications at varying scales. This paves the way for the large scale production and translation of single chain nano materials in daily life. The study has been published in the prestigious scientific journal *Nature Communications*.



PhD Students and Postdoc Received Women in Optical Communications Honors in the Optical Fiber Communication Conference

Gao Yun, Zhang Honghui, PhD students supervised by Prof. Chester Shu, and Dr. Wu Xinru, Postdoctoral staff, supervised by Prof. Tsang Hon Ki received the Women in Optical Communications honors in the Optical Fiber Communications (OFC) Conference held at San Diego, CA, USA on 3 - 7 March 2019.

Gao Yun won the "Corning Women in Optical Communications Scholarship". Zhang Honghui and Dr. Wu Xinru received the "Corning Women in Optical Communications Travel Grants".



PhD Student Received the Best Conference Paper Award

Yangxin Xu, a PhD student supervised by Prof. Max Meng, received the Best Conference Paper Award at IEEE Robio 2018 Conference in Kuala Lumpur.

2018 IEEE Signal Processing Society Best Paper Award

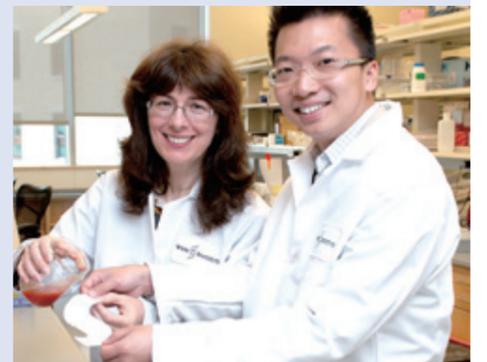
Prof. Anthony Man-Cho So and Prof. Wing-Kin Ma Receive the 2018 IEEE Signal Processing Society Best Paper Award at the 44th International Conference on Acoustics, Speech, and Signal Processing (ICASSP) held in Brighton, United Kingdom.

Their article, titled Outage Constrained Robust Transmit Optimization for Multiuser MISO Downlinks: Tractable Approximations by Conic Optimization, was co-authored with Dr. Kun-Yu Wang, Prof. Tsung-Hui Chang (CUHK-Shenzhen), Prof. Chong-Yung Chi (NTHU), and was published in the IEEE Transactions on Signal Processing in November 2014.



Distinguished Alumnus Awarded US Presidential Early Career Award for Scientists and Engineers

Dr. Wong Tak Sing, a distinguished alumnus from the MAE Department, has been named a recipient of the Presidential Early Career Award for Scientists and Engineers (PECASE) by US Government. The PECASE Award is the highest honor bestowed by the United States government on outstanding scientists and engineers in the early stages of their independent research careers. The awards are conferred annually at the White House following recommendations from participating agencies.



Bank of East Asia 100 Fintech Challenge

A team of CUHK students is recognized as one of the outstanding teams in Bank of East Asia 100 Fintech Challenge with their proposal of all-in-one SME banking solution.

Team members: Chen Yu (Fintech year 2), Lai Ho Nam (MIE year 4), Xu Xiang (Fintech year 2), Meiqi Zeng (Fintech year 2), Yin Mingyao (IBBA year 3), Tie Tianmeng (Fintech year 2)



AI in Conference to Explore AI Trends and Showcase AI Projects

In celebration of the 55th anniversary of CUHK, the Centre for Innovation and Technology (CINTEC) is staged a conference titled "Enroute to the Age of Artificial Intelligence (AI)" in July, drawing over 100 technology leaders, experts, researchers and government officials to discuss the growing trends of AI and its potential applications.



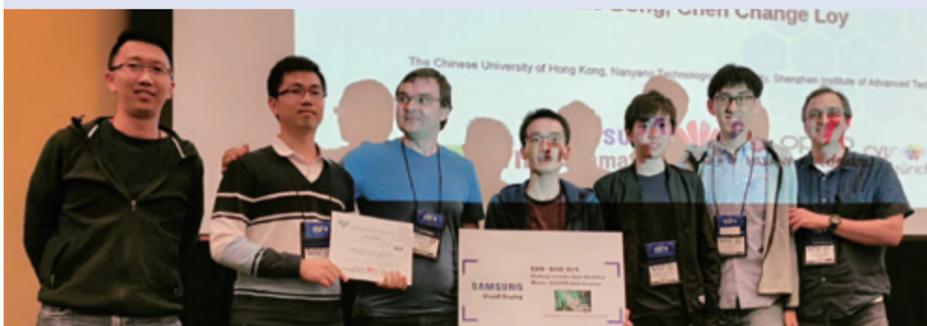
Baby-Care Mobile Apps Developed by IE Alumni Showcase at International ICT Expo 2019

Two baby-care mobile apps "BBGuide" and "Dr. B" were selected to be showcased at the International ICT Expo in April 2019. The two apps were developed by a CUHK start-up team "Bulb Inno", which aimed to use artificial intelligence and collaborated with paediatric experts to help new parents to solve daily problems. The team is composed of three IE graduates in 2018, Bosco Yam, Peter So, Ray Chiu, and Alice Tsang, a graduate from the School of Design of PolyU. The BBGuide was also selected as one of the five finalists in the CUHK Entrepreneurship Competition.



The EDVR Framework Developed by Multimedia Lab Won in the NTIRE 2019

Prof. Chen-change Loy (NTU, CUHK) and Prof. Chao Dong (SIAT) led a joint team with members from The Chinese University of Hong Kong, Nanyang Technological University, Shenzhen Institutes of Advanced Technology, and SenseTime to develop a new deep learning method called EDVR. With this method, the team won all four tracks under the video restoration challenge, which included the tasks of video super-resolution and video deblurring. All team members have very close connection with the Department of Information Engineering, CUHK. They are: Xintao Wang (IE PhD), Kelvin C. K. Chan (2016 MAIE graduate, current a PhD student at NTU), Ke Yu (IE PhD), Chao Dong (2016 IE PhD graduate, current an Associate Professor at SIAT) and Prof. Chen-change Loy (current an Associate Professor at NTU and IE Adjunct Associate Professor).



Automatic Fabrication of Clothes and Footwear to Perfectly Fit Individual's Shape

The pursuit of an improved quality of life by people with increasing requirements means that conventional technology with single and standardised measurements no longer meets consumer demand. The fabrication of personalised clothes and footwear is one of the important factors that has led to the development in smart living. Prof. Charlie C.L. Wang from the Department of Mechanical and Automation Engineering and his team have pioneered Shape Driven Technology. After further improvement and development, it is now equipped with the mature fast scanning, the big-data driven artificial intelligence and the digital knitting technology to achieve its mission of automatically fabricating personalised clothes and footwear according to individual forms.



CUHK Engineering Team Won Champion at the Robocon 2019 Hong Kong Contest

Phantom Dancer, a robotics team from the Faculty of Engineering at The Chinese University of Hong Kong, stood out from a record number of 13 competing teams from 7 local tertiary institutions and became Champion of the Robocon 2019 Hong Kong Contest. The team has represented Hong Kong and won in the Asia-Pacific Robocon finale Mongolia in August. It was the first victory for Hong Kong.



Engineering Students Won the Champion at the 8th Greater China Design Competition

The CUHK Engineering Team, led by Dr. Li Yiyang, Prof. Xu Dongyan and the assessor Mr. Martin Leung from Department of Mechanical and Automation Engineering, competed among contesting teams representing eight universities from Hong Kong, Macau and China, and won the Champion at the 8th Greater China Design Competition which was held in Macau in March, 2019.



Prof. Michael Lyu Received Ministry of Education Higher Education Outstanding Scientific Research Output Award

Prof. Michael Rung-Tsong Lyu, Chairman of Department of Computer Science and Engineering has received the second-class award in Natural Sciences from the Ministry of Education (MoE). His project is titled "Reliability Prediction and Evaluation towards Software Services".

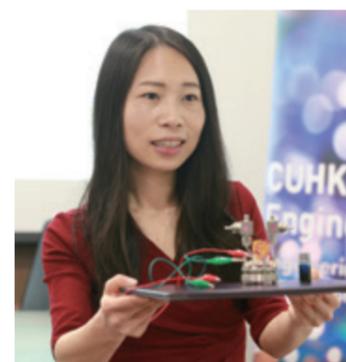


CUHK Engineering x SenseTime AI Competition Trains AI Talents

The Faculty and SenseTime Group Ltd jointly held an AI Competition for Secondary Schools at the CUHK campus on 11 May 2019, with over 30 teams from 22 schools participated. The event resulted in the team from St. Paul's Co-educational College winning the first prize with their project "Cantonese lip reading".



A Safe, High-rate, and Long-life Organic-oxygen Battery: A New Chapter in Renewable Energy Storage



Alkali metal-oxygen batteries promise high gravimetric energy densities but suffer from low rate capability, poor cycle life and safety hazards associated with metal anodes. A safe, high-rate and long-life oxygen battery that exploits a potassium biphenyl complex anode instead of the problematic potassium metal anode has recently been developed by Prof. Yi-Chun Lu, Department of Mechanical and Automation Engineering and her research team. This technology provides a safe and efficient solution for the storage of renewable energy sources such as solar and wind. The breakthrough was published in the world-leading scientific journal, *Nature Materials*, a sister journal of *Nature*.



INNOVATION AND TECHNOLOGY STUDENT CLUB

With a view to prepare Hong Kong for new challenges, the Faculty of Engineering, The Chinese University of Hong Kong set up an "Innovation and Technology Student Club" (ITSC) jointly with Innovation and Technology Commission (ITC). Our vision is to nurture young talent to become the future technology elite who will contribute to the development of Hong Kong. Since May 2009, we have recruited almost 2,000 secondary students with interests in science and engineering.

ITSC 2019 Exchange Camp to Fu Shan

During Easter Holiday from 26-29 April, 2019, ITSC set up a booth for InnoCarnival 2018 organized by ITC, HKSAR in Hong Kong Science Park. With a theme of "Arduino" this year, we created a game "Arduino 考思路" which was unique and attractive to the public. The players need to select the right pipelines to reach the big prize destination. An Arduino experience corner has also been set up for students to learn how to make Arduino work.



Professor Wong Kam-fai (left 4) with ITSC members as ambassadors and our staff members and helpers



Kids enjoyed playing our game



Our game field and the Arduino experience corner

Robotics, STEM and Green Innovation

With the funding support from Innovation and Technology Commission, and sponsorships from Hong Kong Science and Technology Parks Corporation and Mitsubishi Electric (Hong Kong) Limited, The Chinese University of Hong Kong cooperates with Hong Kong Technology Education Association to launch a two-year project called 'Robotics, STEM and Green Innovation'. The project combines STEM education and green technologies. There are three elements including trainings, competitions and exhibitions.



Group photo



Plastic bottle recycling machine by "The Chinese Foundation Secondary School"



Smart classroom system by "G.T. (Ellen Yeung) College"

"Green innovation 2019" is one of the important competitions in the project. The theme of the competition is "green classroom", applicants need to design a system or product to handle environmental problems in the classroom, such as energy, recycling and noise.

The competition took place at Hong Kong Science Park on 5 July 2019. The competition attracted more than 100 teams to register that came from more than 50 primary and secondary schools. The competition was divided into two parts: exhibition and presentation. Competition teams maybe in one column need to exhibit their system or product to public and judges. Furthermore, the top ten teams will be invited to have a detail presentation after the exhibition, the highest score team in the presentation will become champion.

The champion of the primary school was "G.T. (Ellen Yeung) College", and they designed an energy-saving system. The system monitors the classroom, if no one in the classroom, the system will automatically switch off the fan, light and air conditioning to save energy. The champion of the secondary school is "The Chinese Foundation Secondary School", they designed a plastic bottle recycling machine. The machine can classify different types of plastic and drop into different recycling boxes, It makes recycling more effective.

For more details about the competition, please visit project website: www.6artsplus.com/green-innovation



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