An Interview with EIE Alumni Dr Franki Poon and Dr Joe Liu

Distinguished Lecture by Prof. Leon Chua
Recipient of PolyU 2014 Honorary Degree of Doctor of Science

19th International Conference on Digital Signal Processing
organized in Hong Kong for the First Time

New BSc (Hons) in Information Security Degree Programme
to be offered starting 2015/16

EIE Dragon Boat Team Won the Champion
in Stanley Dragon Boat Men's B Heat Race
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Welcome to our EIE Network. This is the second of our annual magazines aimed to keep you up to date with the developments and achievements in the department.

PolyU continues to be at the forefront of developments in information technology from hardware to software and I believe the reports in this magazine will attest to this. Indeed the subject is continuously evolving and we cannot standstill, for this reason, we are introducing a new top-up programme in Information Security that reflects the demands of an increasingly connected world. We expect to train a new generation of alumni who will make our world a safer place!

Many of our alumni have had highly successful careers and it is particularly pleasing when they are duly recognized. We were therefore delighted when the Chairman of our Departmental Advisory Committee, Dr Humphrey Leung Kwong Wai, Group CEO and Founder of Solomon Systech Limited was awarded the prestigious University Fellowship this January. Many congratulations.

We hope EIE Network reflects our current ventures and keeps you in touch with the developing face of PolyU EIE. Finally, if you have any comments on things you would like to see or features that you think would be informative please let us know. As electronic engineers we know the importance of feedback both negative and positive.

Professor Michael Somekh
Many engineering graduates in Hong Kong work for multinational electronics companies, the government and other big hongs. Few would venture into setting up their own shops. Dr Franki Poon and Dr Joe Liu, PhD graduates of the Department of Electronic and Information Engineering (EIE) of PolyU, are the latter. Their company, PowerELab, originally a spin-off from a laboratory in Hong Kong, is now serving customers around the world.

For Poon, setting up his own business has always been on his mind. “It is hard for me to work with supervisors or bosses,” grinned Poon. “I want to have my own way from early on. I want to have my own theory, work, business and do what I like.” Poon more than one time described himself as someone who would wish, plan and then take action but the result is not always the same as he wishes. “I guess I couldn’t change reality but rather reality changes me,” reflected Poon.

Liu is the opposite. He would not set out to change things but would rather sit back, relax and ponder on how to address different situations. “I am lazy and don’t go out to explore new things,” concluded Liu. These two different personalities have worked together well. Seldom do they have strong conflicts over issues for the company. “Our partnership is like a marriage,” Liu suggested. “We just live with it.” And the conflicts are usually immaterial, much like the conversation between spouses. “You don’t value me!” -- an example Poon quoted.

Power design now bonds them together but it was chance that brought them into the field. “It just so happened that I had worked for a power supply company years ago and found myself being interested in it,” said Poon. Although Liu also took up power supply work by chance, it was an entirely different scenario. “I got a summer job interview which I thought was for a gaming company (Atari). Only when I attended the interview did I learn that it was a power supply manufacturer (Astec),” said Liu. The job interested him so much that he continued his career in power electronics.

After working for different companies, the two met at the laboratory in the University of Hong Kong and developed further interest and expertise in power supply design. They even went back to school to study the same PhD programme in EIE of PolyU.

Poon found it necessary to go back to school to prove his thinking. “I faced a lot of issues in power supply and people said that these couldn’t be solved, not even theoretically. I thought otherwise so I wanted to go back to school to prove that I was right. And I did.”
Liu followed suit. He saw that Poon was doing something exciting so he wanted to try too. "I did it out of interest. Although I can write papers and do research work on my own, I might not have done all these without going through the PhD programme because people, by nature, are lazy."

"We have been in the industry for some time and the ultimate question being asked is cost," Poon recollected. "If we could ask different questions, our entire outlook would be different. It is a much needed kind of training if Hong Kong is to become a knowledge economy. After all, the world is driven by knowledge and people would be stratified by it."

According to them, the PhD programme benefited their business too. "PowerELab designs circuitry. When people see that we are both doctoral degree holders, their first impression would be that we have strong academic background," elaborated Poon. "The patents and papers that we have developed and written also give customers confidence initially. But of course, long term relationship depends on our knowledge and our strength in design," Liu added.

Today, PowerELab has four areas of business: design, licensing, digital control solutions and software. Among these, design is still the main source of revenue stream. "Not too many people have the knowledge as we do in power supply design," said both. "Competition is not that keen in our segment. We have done very little marketing in the past. Only in recent years did we go to APEC (a tradeshow in the USA)."

But a lot of customers have found them through the web. People send them emails to ask them questions. Once people find that they understand the problems, jobs would follow. Their PowerESim (an online power supply design software) also helps attract customers. Visitors of this site come to know their expertise and eventually become their customers. PowerESim is not just a tool for customers or hobbyists, it is also a steady source of income.

"We charged part suppliers a fee for putting their components in the system," said Poon. "Their products would show up in the designs in the free user version. For those who pay to use the full version, all suitable parts would be displayed in the designs." So income comes from manufacturers as well as users.

Although they are not the only one to provide such tools, they are winning customers over to their side. In the month of December 2014 alone, about 15,000 unique visitors from 4,500 domains used PowerESim to generate 126,035 designs. More than one-fifth of the users have over 20 years of work experience, according to a survey done earlier.

While they look to the world to expand their customer base, it is not easy to recruit staff locally. "In Hong Kong, designers do not share the same recognition as they do in the USA," raised Liu. "The environment in Hong Kong doesn't favour design engineers. This is possibly an influence from China where people are not prepared to pay for designs." Nonetheless, both reiterated that young people need to go for things that will brush up their minds and polish their skills because ultimately these are what differentiate them from the rest of the pack.

When asked about their advice for young people who wish to start their own business, Poon immediately jumped in and said that they should just do it. "Thinking too much is of no use. You always need decisions." And obviously they are enjoying their decisions. "I am doing what I am interested in and I define my work every day," Poon's statement probably provides a good summary of this successful and happy partnership.
Department News
On 20-23 August 2014, the Centre for Signal Processing of the Department organized the 19th International Conference on Digital Signal Processing (DSP 2014) at the Hong Kong Polytechnic University. Initiated by Imperial College, London, the DSP 2014 was organized by The Hong Kong Polytechnic University and co-sponsored by the IEEE Signal Processing Society, The European Association for Signal Processing (EURASIP), Asia-Pacific Signal and Information Processing Association (APSIPA), and IET. The Conference has a long history. It was commenced in London in 1968 and was held mainly in UK and western Europe. This is the first time that the Conference was held outside Europe.

DSP 2014 addresses the theory and application of filtering, coding, transmitting, estimating, detecting, analyzing, recognizing, synthesizing, recording, and reproducing signals by means of digital devices or techniques. The Conference has received over 300 high-quality contributions from researchers of 38 countries. It has also attracted high quality presentations with the attendance of a large number of eminent scholars, including over 20 IEEE fellows/FREng attending various parts of the conference activities. A rich technical program consisting of innovative works in different traditional and emerging areas in digital signal processing was formed. Many colleagues of the Department played important roles in DSP 2014. Prof. WC Siu was one of the keynote speakers of this conference. Dr Daniel Lun was the General co-chair, Dr YL Chan was the Technical co-chair, Prof. Kenneth Lam was the Special session co-chair, Dr Chris Chan was the Finance chair, Dr Frank Leung was the local arrangement co-chair and Dr Bonnie Law was the conference secretary.

Honorary Professorship 2014 by the Zhejiang University

Congratulations to Prof. Michael Somekh for being awarded the Honorary Professorship 2014 by the Zhejiang University, Hangzhou, China. Prof. Somekh joined PolyU in 2014 as Chair Professor of Biophotonics and Head of EIE where he is establishing new characterisation methods based on both plasmonics and phononics as well as developing enhanced processing techniques in biological microscopy.
Distinguished Lecture in Electronic and Information Engineering

It was our great honour to have Prof. Leon Chua, the recipient of 2014 Honorary Degree of Doctor of Science of PolyU, and Chair Professor of Nonlinear Circuits and Complexity Theory (under the Distinguished Scholars Scheme) of the Department, to deliver a Distinguished Lecture in Electronic and Information Engineering entitled “What’s New in Wolfram’s New Kind of Science?” on 21 November 2014 in PolyU. The lecture attracted about 200 academics and students from local and Mainland universities. Prof. Chua is Professor of the Electrical Engineering and Computer Sciences Department of the University of California, Berkeley. He was elected an IEEE Fellow in 1974. He was the first recipient of the IEEE Gustav Robert Kirchhoff Award in 2005 and was awarded the IEEE Neural Networks Pioneer Award in 2000. In this lecture, Prof. Chua presented a definitive and explicit mathematical theory which explains and clarifies Stephen Wolfram’s remarkable intuitions and insights from his monumental tome “A New Kind of Science”, which contains a huge collection of complex dynamical phenomena recorded from countless hours of brute force computer simulations of one-dimensional Cellular Automata (CA).

Dr Ben Cheng Received CyberC 2013 Program Chair Excellence Award

Congratulations to Dr Ben Cheng who has received the CyberC 2013 Program Chair Excellence Award from the International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery held in October 2013 in Beijing, China! Dr Cheng has been serving the conference as the workshop Co-chair and the Chairperson of CyberC’s associated workshop, International Workshop on Smart Sensor Networks (IWSSN), since 2012. The aim of the aforementioned workshop is to gather latest research breakthroughs in the area of sensor networks development, especially for their applications in smart power distribution systems, intelligent public transport services, pervasive health technologies and social networks.
Seminar by Prof. Curtis Menyuk from University of Maryland Baltimore Country

Prof. Curtis Menyuk, our Visiting Chair Professor comes from the University of Maryland Baltimore Country, USA, paid a visit to the Department between 9 and 29 January 2014. Prof. Menyuk delivered a seminar entitled "Solitons, Self-Induced Transparency, and Modelocking in Quantum Cascade Lasers" to introduce quantum cascade lasers during his visit on 27 January 2014. Prof. Menyuk received the B.S. and M.S. degrees from MIT in 1976 and the Ph.D. from UCLA in 1981. For the last 25 years, his primary research area has been theoretical and computational studies of lasers, nonlinear optics, and fiber optic communications. He is a fellow of the American Physical Society, the Optical Society of America, and the IEEE. He is also a former UMBC Presidential Research Professor and the winner of the 2013 IEEE Photonics Society William Striefer Award.

International Workshop on Plasma Application and Hybrid Functionally Materials

The Department successfully co-organized the 7th International Workshop on Plasma Application and Hybrid Functionally Materials from 7 to 10 March 2014. The Workshop attracted over 50 participants from countries like Germany, Japan, Korea, Malaysia, Poland, Saudi Arabia and mainland China. Participants exchanged ideas and presented results related to plasma applications, including applications to microelectronics and environmental problems, as well as applications to high-energy sources, such as electron, ion and laser beams.

Seminar by Dr Melissa Mather from University of Nottingham

Dr Melissa Mather, Principal Research Fellow of the Institute of Biophysics, Imaging and Optical Science, University of Nottingham, conducted a seminar in the Department on 17 March 2014. In the seminar "Real time, label-free characterisation of live cells in monolayer culture using high resolution, multi-modal light microscopy", Dr Mather reported a novel multi-modal light microscope for non-invasive, label-free characterisation of live cells. The research expertise of Dr Mather lies in the non-invasive monitoring of cells and tissue. She is currently a holder of an EPSRC Career Acceleration Fellowship developing ultrasound nano-transducers for tracking of cells used in Regenerative Medicine and co-Investigator on the EPSRC Centre for Innovative Manufacturing in Regenerative Medicine.
Collaboration with RS Components Ltd.

The Department has come to an agreement on collaboration with the RS Components Ltd. (RS), a global industrial component distributor, recently. RS would support the Department’s teaching activities by providing licenses for powerful design tools like DesignSpark PCB and DesignSpark Mechanical, and hardware development platforms like Arduino and Raspberry Pi. RS would also provide training workshops, company visits and internship opportunities in future. The Department will continue to seek for collaborations of this kind with our industrial partners actively for the benefit of our staff and students.

Plenary Talk at the 8th Symposium on Power Electronics and Electrical Drives

Prof. Michael Tse was invited to deliver a plenary talk at the 8th Symposium on Power Electronics and Electrical Drives held in April 12-13 2014 in Wuhan. The symposium is a flagship conference for all leading power electronics research centres in China with participation and support from the IEEE Power Electronics Society. This year's conference attracted over 200 participants from China, Japan, UK and USA. Prof. Tse also took the opportunity to organize a private gathering for EIE alumni and former research personnel who now live in Wuhan or were attending the conference in Wuhan. The gathering was attended by 15 EIE alumni and former research personnel.

Departmental Retreat

The Departmental Retreat took place in the Auberge Discovery Bay Hong Kong between 22 and 23 May 2014. Different topics related to the academic and research developments of the Department were discussed in the meetings. Staff members also took this opportunity to visit the Hong Kong Science Park and the Solomon Systech Limited, a leading semiconductor company established by Dr Humphrey Leung, our Departmental Advisory Committee Chairman, during the retreat.
Delegation from Universitas Negeri Yogyakarta

A delegation from the Universitas Negeri Yogyakarta, Indonesia, led by Dr Handaru Jati, Head of Electronics Department, and Dr Ratna Wardani, Head of Informatics Engineering, paid a visit to the Department on 26 May 2014. The delegates met with Dr Daniel Lun, Associate Head of Department, before touring the Optical Communications and Networking Research Laboratory and the Microfabrication Laboratory.

IET Wireless Symposium 2014

The IET Wireless Symposium 2014 was organized by the Electronics and Communications Section of the Institution of Engineering and Technology (IET) and co-organized by the Department on 20 June 2014 in PolyU. The objective of this event is to provide a dynamic forum for IET members and engineers from academia and industry to discuss ideas related to the Fifth Generation-5G wireless communication systems and testing vehicle. The symposium featured a comprehensive technical program including a number of symposia, exhibition and demonstration. Prof. Michael Somekh, Head of Department, made a welcome speech for this occasion. Dr Zhong Kangping, Research Associate of EIE, also conducted a seminar entitled “Ultra High Capacity Coherent Optical Communication Systems” to share the latest technology in optical communication systems in the symposium.
Visit by Departmental Academic Advisor

Prof. Philip Krein, the Departmental Academic Advisor, visited the Department between 20 and 24 June 2014. Prof. Krein is Grainger Endowed Director’s Chair in Electric Machinery and Electromechanics, and Professor from the Department of Electrical and Computer Engineering, University of Illinois at Urbana-Champaign, USA. Several meetings for discussion on academic programmes and research, and an open forum for all academic staff members were conducted during the visit. Prof. Krein also delivered a seminar on “A low energy building case study: Targeting zero net energy in the new electrical and computer engineering building at the University of Illinois” on 20 June 2014 to introduce the frontiers of design and technology to achieve low-energy buildings being implemented around the world.

Delegation from Beihang University

A 45-member delegation from the Beihang University, Beijing, visited PolyU on 23 July 2014. The academics, research and undergraduate students toured different facilities of the University. In particular, they have visited our microfabrication Laboratory, and the Optical Communications and Networking Research Laboratory.

DesignSpark PCB Workshop

A DesignSpark PCB Workshop jointly organized by the Department and the RS Components Ltd. (RS) was held in the campus on 26 July 2014 for 19 EIE Robotics Club members. Two speakers from the RS facilitated the workshop and shared with the attendees the useful features of DesignSpark PCB. It is a powerful and professional electronic design package that can perform schematic capture, produce PCB board design and layout, and generate manufacturing files and impressive 3D views to visualize designs in real time. Thanks to the collaboration between EIE and RS, our students and staff can now enjoy free license for using DesignSpark PCB and other packages from RS which would be very helpful to our quality teaching. We expect that workshops of similar nature will continue to be organized in the future.
Seminar by Prof. Joseph Haus from University of Dayton

Prof. Joseph Haus from the University of Dayton at Ohio, USA, conducted a seminar in the Department on 25 August 2014. Prof. Haus served as Director of the Electro-Optics Program at the University of Dayton for thirteen years (1999-2012) and he is Director of the Ladar and Optical Communications Institute (LOCI). He is a fellow of the Optical Society of America, SPIE and the American Physical Society. He has international collaborations with groups for more than thirty years investigating nanophotonics systems including heterogeneous nanoparticles, photonic crystals and metamaterials. In the seminar “Reaching the Ultimate Limits in Nanophotonics”, Prof. Haus introduced his research work in exploring the electromagnetic scattering properties of plasmonic systems and a new model in plasmonics that smears the interface on the sub-nanometer scale with experimentally verifiable consequences.

Visit by Overseas Academic Advisors

Prof. Keyue Smedley and Prof. Kin Leung, the Department’s Overseas Academic Advisors, paid a visit to the Department between 18 and 20 August 2014. Prof. Smedley, Professor from the Department of Electrical Engineering and Computer Science, University of California at Irvine, USA, and Prof. Leung, Professor from the Electrical and Electronic Engineering and Computing Departments, Imperial College, UK, met with the Departmental Learning and Teaching Committee, Programme Leaders and academic staff members for extensive discussions on academic programmes and research during the visit. They undertook a holistic review of the Department’s work and provided valuable advice for future planning of the Department.

Seminar by Prof. Tyrone Fernando from University of Western Australia

A seminar entitled “Functional Observability and Functional Observability Indices” was given by Prof. Tyrone Fernando from the University of Western Australia on 5 December 2014 in the Department. Prof. Fernando introduced functional observability indices and the minimum order for a functional observer in terms of those functional observability indices in this seminar. Prof. Fernando is Professor of the School of Electrical Electronic and Computer Engineering and a senior member of the IEEE. His research interests are in control theory and application of control theory to biomedical engineering and power systems.
Keynote Presentation at International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery

Dr Ben Cheng was invited to deliver a keynote presentation at the International Conference on Cyber-Enabled Distributed Computing and Knowledge Discovery (CyberC’2014) held on 10-12 October 2014 in Shanghai, China. The conference is one of the major conferences on cyber-related technology supported by the IEEE computer society. “Big Data” was selected as the conference’s theme of this year and the conference had attracted more than 200 attendees from both academia and industry. Dr Cheng’s talk on “Delay-Aware Big Data Collection Strategies for Sensor Cloud Services” was well received by the audiences and obtained a Keynote Excellence Award from the organizing committee. The handouts have been made available on Dr Cheng’s website (http://www.eie.polyu.edu.hk/~bcheng/).

Seminar by Dr Guan Yong Liang from Nanyang Technological University, Singapore

Dr Guan Yong Liang from the Nanyang Technological University, Singapore, conducted a seminar on 21 November 2014 in the Department. Dr Guan is Associate Professor of the School of Electrical and Electronic Engineering. He was Head of Division in 2011-2014 and Director of the Positioning and Wireless Technology Center in 2007-2011. His research interests broadly include coding and signal processing for communication systems, storage systems and information security systems. In the seminar “Coding and Signal Processing for Magnetic and Semiconductor Storage”, Dr Guan outlined how coding and signal processing techniques such as 2-dimensional equalization, dirty-paper channel coding, joint synchronization-pinning bits, and signal redesign, could help to alleviate some of the challenges.

Faculty Research Grant Achievement Award

Congratulations to Prof. Michael Tse for attaining the Faculty of Engineering Research Grant Achievement Award 2012! The Award is to recognize Prof. Tse’s outstanding performance in securing external competitive research grants. Prof. Tse is presently Chair Professor of Electronic Engineering of the Department. He is a Fellow of IEEE and also a Fellow of the Institution of Engineers Australia. His research areas include power electronics, energy systems, networks and nonlinear systems.
Seminar by Prof. Anthony Kuh from University of Hawaii at Manoa, USA

A seminar delivered by Prof. Anthony Kuh to introduce the machine Learning algorithms and applications in signal processing, smart grids and energy was organized by the Centre for Signal Processing on 15 December 2014. Prof. Kuh is currently a Professor of the Electrical Engineering Department at the University of Hawaii. He served as Chair of the Department from 1999 to 2002. Prof. Kuh was a recipient of the NSF Presidential Young Investigator Award in 1988. He was elected Fellow of the Institute of Electrical and Electronics Engineers (IEEE) in 1998 for his contributions to analysis of neural network models and their applications to signal processing. His research interests are in machine learning, adaptive signal processing, and sensor networks.

Seminar by Dr Svetlana Vitusevich from Forschungszentrum Juelich, Germany

Dr Svetlana Vitusevich from the Forschungszentrum Juelich, Germany, held a seminar on “Advanced Nanostructures for Biosensing Applications” on 10 December 2014 in the Department. She reported the recent progress and challenges in the development of advanced high-speed devices for biosensor applications. Dr Vitusevich is an active teacher at the Technical University of Dortmund and a group leader at Forschungszentrum Juelich. She has authored or co-authored more than 300 papers in refereed scientific journals and 8 patents. Her research interests include design and development of novel device structures for future information technologies, transport and noise properties of different kind materials and advanced electronic devices.

Winning Faculty Award for Outstanding Performance/Achievement 2013/14

Congratulations to Prof. W.C. Siu on winning the Faculty Award for Outstanding Performance/Achievement in Research and Scholarly Activities 2013/14!

Prof. Siu joined the University in 1980 and became Chair Professor in the Department of Electronic and Information Engineering in 1992. He is Director of the Centre for Signal Processing, which is one of the best research centres in the world in this area. He was Head of EIE and subsequently Dean of Faculty of Engineering between 1994 and 2002. Professor Siu is an expert in Digital Signal Processing, specializing in fast algorithms, video coding, pattern recognition and surveillance. His works on motion estimation, transcoding and DCT algorithms are well received by academic peers with high citations. Furthermore, many of his research work have also been ported into industrial uses for hi-tech development. Prof. Siu is an IEEE Fellow. He is also a Vice President, Chair of Conference Board and a core member of the Board of Governors of the IEEE Signal Processing Society (2012–2014).

Prof. Siu has been further nominated by the Faculty for the President’s Award for Excellent Performance/Achievement 2013/14. Congratulations again to Prof. Siu for his excellent research achievement!
New Bachelor of Science (Hons) Degree Programme in Information Security

The Department is launching a new 2-year government-funded top-up degree programme namely, Bachelor of Science (Honours) Degree in Information Security, starting from 2015/16 academic year. This programme is jointly offered by the EIE and the Department of Computing which aims at producing graduates with professional knowledge and skills in Information Security. The programme has started selecting applications for the September 2015 entry from Associate Degree/Higher Diploma graduates with Information Technology, Computing, Engineering or similar backgrounds.

EIE South Korea Study Tour

A South Korea Study Tour was organized for 30 EIE students between 7 and 11 January 2014. Led by Dr Zheru Chi, our students visited the Korea Polytechnic University, the Korea Advanced Institute of Science and Technology (KAIST), the Korea Gas Corporation, the Samsung Exhibition Center, the National Museum of Korea and the Korean Demilitarized Zone during the tour. All participants found this trip very meaningful as it provided a valuable opportunity to explore the tertiary education, history, culture and technology development of South Korea.

Information Session of Undergraduate Degree Programmes

An Information Session of EIE Undergraduate Degree Programmes was held on 21 January 2014 in the campus. Dr C.K. Leung and Dr Frank Leung, our programme leaders, introduced the BEng in EIE and BSc in IMT programmes to about 200 higher diploma and advanced standing students from our Department and other institutions. The participants were very impressed by knowing more on how these two programmes could prepare them to embark on a career in the engineering profession.
Exchange Activity with Korean Students

Four undergraduate students from the Electronic Engineering Department of the Korea Polytechnic University were received by Prof. Francis Lau when they visited the Department on 6 January 2014. As part of the Korea Polytechnic University’s Global Challenge Programme, a meeting between the Korean and EIE students was held to discuss the mobile industry in China and Hong Kong. Our students also shared their learning and living experiences with their Korean counterparts through this exchange activity.

Delegation from Korea Polytechnic University

Prof. Jeho Lee, General Manager of the International Student Affairs Team, and 36 students from the Korea Polytechnic University, paid a visit to the Department on 26 February 2014. The visit was kicked start by a meeting to discuss the collaboration and student exchange programme between two institutions. The Korean delegation also visited the Optical Communications and Networking Research Laboratory, the Virtual Reality Laboratory, the Microfabrication Laboratory and other facilities of the Department.

Visit from the CNEC Lau Wing Sang Secondary School

Dr C.K. Leung, BEng in EIE Programme Leader, conducted a talk on information and communications technology introducing the engineering and information technology disciplines to a group of secondary students from the CNEC Lau Wing Sang Secondary School on 27 March 2014. The students also toured the Department’s facilities including the Microfabrication Laboratory and the Virtual Reality Laboratory during their visit. They all found the introduction on semiconductors and the demonstration on interactive multimedia projects very interesting.
Project Demonstration Day

The Project Demonstration Day was held by the Department on 20 May 2014. More than 100 final-year projects covering a broad range of studies in circuits and microelectronics, computer and information engineering, and communications engineering were demonstrated by the final-year students to their classmates, academic staff and the Departmental Advisory Committee members who visited the Department on the same day. Our students’ technical knowledge and presentation skill were deeply appreciated by the visitors.

EIE-SYSU Exchange Tour

Led by Dr C.K. Leung, 29 EIE students joined the EIE-SYSU Exchange Tour to the Sun Yat-sen University (SYSU) in Guangzhou from 24 to 26 May 2014. During the tour the students participated in a series of academic and cultural activities. Six EIE final-year students took part in a project presentation contest organized by the SYSU. The participants also visited different historical sites of Guangzhou including the Museum of the Mausoleum of the Nanyue King. This exchange activity gave a chance for our students to share their academic knowledge as well as the life and learning experience in Hong Kong with their SYSU counterparts.

Robotic Project Competition and Mobile Game Design Project Competition

The Robotic Project Competition and the Mobile Game Design Project Competition were organized by the Department on 27 May 2014. Six teams of EIE second-year students joined the Robotic Project Competition by composing an autonomous robotic vehicle to fight for the championship. Three winning teams of the Mobile Game Design Project Competition also demonstrated their mobile games to the audience in this occasion. These two competitions served as a platform for our students to enhance their creativity and technical skills, and provided a good opportunity for them to exchange their learning experience with other participants.
Robocon Hong Kong Contest 2014

Led by Dr Frank Leung and Dr Bruce Sham, a team of 8 EIE students participated in the “Robocon Hong Kong Contest 2014” co-organized by the Hong Kong Cyberport Management Company Ltd., the Hong Kong Computer Society (HKCS) and the Hong Kong Institution of Engineers (HKIE) Information Technology Division, held at Cyberport on 22 June 2014. Robocon is an international contest that aims to encourage the design and construction of robots. This competition not only offered a platform for the EIE Team to explore and demonstrate their creativity and technical skills, it also provided a valuable chance for our students to exchange learning experience in engineering with the other participants.

Delegation from Sun Yat-sen University

A delegation including 41 students and 4 staff from the Sun Yat-sen University (SYSU) visited the Department on 2 and 3 July 2014. It was a fruitful trip for the students before they enter our BEng(Hons) in Electronic Engineering (BEng in ENC) programme in 2015 after successful completion of their first 2 years of study at the SYSU. The delegates were received by Prof. Francis Lau, Associate Head of the Department, and Dr Bonnie Law, BEng in ENC Programme Leader. Various activities including a tour to our laboratories and the Industrial Centre, an exchange session between EIE and SYSU students, and a lecture on Electronic Music delivered by Dr C.K. Leung were arranged during the visit. We look forward to meeting the students again when they join the Department next year!

Winning in Emotion Recognition in the Wild Challenge 2014

A team of EIE staff and a research student, including Dr Zheru Chi, Mr JunKai Chen, Dr Zenghai Chen, and Dr Hong Fu, won the Second Runner-Up Award in the Emotion Recognition in the Wild Challenge 2014 organized by the 16th ACM International Conference on Multimodal Interaction, on 12-16 November 2014, in Turkey. The winning team proposed a new feature descriptor called Histogram of Oriented Gradients from Three Orthogonal Planes (HOG_TOP) to represent facial expressions in their paper “Emotion Recognition in the Wild with Feature Fusion and Multiple Kernel Learning.”
PolyU Education Info Day 2014

The annual PolyU Education Info Day held on 11 October 2014 attracted about 8000 visitors to visit our booth and the Department. The demonstrations in the booth and laboratories covered a broad range of study and research areas of EIE such as computer and information engineering, circuits and microelectronic engineering, and communications engineering, etc. The programme leaders, Dr C.K. Leung, Dr Frank Leung and Dr Y.L. Chan, also conducted five information seminars to introduce our undergraduate programmes to prospective students. This event successfully facilitated visitors to access different aspects of technology interactively and aroused their interest towards the electronic and information engineering discipline.

Innovation Festival in Malmo, Sweden

Chan Chi Lam, our Year-3 BSc in IMT student, was nominated by the Faculty of Engineering to visit Malmo, Sweden, with three other engineering students between 8 and 16 November 2014. The students from Hong Kong worked on three international final-year projects under the themes of health and elderly, internet of things and environmental products, with six students from the Lund University and the Malmö University during the visit. The final prototypes of the projects were showcased at the Innovation Festival organized by the Government of Sweden and City of Malmo from 13 to 15 November 2014 in Sweden.

Excellence Award for Innovation in GSC: PolyU Pre-Challenge

Teamed up with two ISE students, Huang Yicheng, one of our final-year BEng in EIE students, won the Excellence Award for Innovation by their business plan “Shoe Pad” in the Global Student Challenge (GSC): PolyU Pre-Challenge. A shoe pad designed for the elderly with GPS tracking devices and blood pressure biosensors is developed by the winning team. This competition aims to foster an entrepreneurship spirit among PolyU students while preparing them for the ever-changing and highly competitive business world. It is indeed an invaluable opportunity for students from different disciplines to turn their dreams or ideas into practical products and services. The award presentation ceremony was held on 9 April 2014 in the campus. Congratulations to Huang for his achievement!
Alumni Activities
Alumni Sharing in Career Talk by Harmonic Technologies (HK) Ltd.

A career talk conducted by the Harmonic Technologies (HK) Ltd. was held on 12 February 2014 for our undergraduate and postgraduate students. Headquartered in California, Harmonic is a leading provider of video delivery solutions to broadcast, cable, satellite, Internet and mobile providers worldwide. Mr Chen Zhang and Mr Liu Long, two graduates from the BEng in EIE and BSc in IMT programmes respectively who are now working for this company, also came back to the Department to share their enthusiasm for working in the information and communications technology industry.

Winning in Stanley International Dragon Boat Championships

Let’s give a big cheer to the EIE Dragon Boat Team for snatching two trophies in the Stanley International Dragon Boat Championships 2014 organized by the Stanley Residents Association on 2 June 2014! After months of intensive training and practice, the EIE Dragon Boat Team took home the Champion in Men’s B Heat Race and the 7th Runner-up in Men’s B Silver Cup Final. This is the best result ever for the team formed since 2008 by a group of EIE students, staff and alumni. Ms Marjorie Yang, Chairman of Council, and Prof. Michael Somekh, Head of Department, also showed up at the Stanley Main Beach to share the joy of victory with the team members. The team’s achievement was recognized by President Prof. Timothy Tong as well when Mr Jason Tsui, Team Manager, presented a photo album showing the development of the team to the President in another occasion.
Interactive Classroom Teaching System Developed by EIE Graduate

Supervised by Dr Ben Cheng, Mr Fok Kai Yin, our recent graduate of the BSc in IMT Programme, has been conducting a project on the design of an interactive classroom teaching system using Leap Motion sensors. Mr Fok has successfully applied his work to convert ordinary flat-panel displays or projectors into interactive classroom teaching systems. The project has been selected by the Faculty of Engineering to display at the central booth of the HKIE Hi-Tech Fiesta 2014 held on 8 June 2014. The aims of the event are to bring top IT innovators from different institutes together and to promote engineering disciplines to the general public. The project has drawn a lot of attentions and received a lot of inquiries during the event. Visitors were amazed and impressed by the futuristic in-the-air control functions of our classroom teaching system. For interested parties, the system will be made available on the Leap Motion Airspace Store at https://airspace.leapmotion.com/ for free in the coming months. Stay tuned!

Award Winning Final-year Project by EIE Graduate

Supervised by Dr M.W. Mak, Mr Leung Wing Lung, our recent graduate of the BEng in EIE Programme, won two Merit Awards for his final-year project in the “Young Professionals Exhibition & Competition 2014” organized by The Institution of Engineering and Technology Hong Kong, and in the “Crossover 2014 Pan-Pearl River Delta Region Universities IT Project Competition” organized by the Internet Professional Association. The award winning project “Smart Phone Applications for On-line Ticketing Services” developed an application to perform online ticketing in the Android operating system and studied the technologies involved in the back-end system architecture. Congratulations to Mr Leung for his great work!

Alumni BBQ Gathering

The Alumni Association of Electronic and Information Engineering (AAEIE) joined hands with the Alumni Association of Nursing Studies (AANS) and the Hong Kong Community College Alumni Association (HKCCAA) to organize a BBQ gathering in Sai Kung on 26 October 2014. It was a joyful event for 45 alumni from different fields to meet and update each other.
EIE Alumni Band Performing in Engineering Summer Camp

To promote awareness and understanding about engineering disciplines by the general public, the Faculty of Engineering has been organizing summer camp for secondary school students for many years. This year, the engineering summer camp was held from 23 to 25 July 2014 and EIE was one of the participating departments. Our staff members, Dr Ben Cheng, Mr S.Y. Lam, Mr Ivan Lau, Mr Y.M. Wong and Mr Zero Fok, organized industrial site visits and a 3-day intensive electronic workshop. In the workshop, the participants were guided to build their own tin-can headphone amplifier. They were enlightened by the constructive suggestions from our guest judge, Prof. Francis Lau. Many participants found the workshop interesting and mentioned that they have started considering electronic engineering as their future career. Another key event of the summer camp was the high-table dinner which provided the participants with a taste of university life. To boost the atmosphere, our EIE alumni band “Break Four” was invited to perform at the summer camp dinner, which was the climax of the whole event.

AAEIE AGM and Alumni Gathering 2014

The EIE Alumni Gathering 2014 was successfully held by the Alumni Association of Department of Electronic and Information Engineering (AAEIE) at the PolyU Staff Club Restaurant on 15 December 2014. About 30 alumni and staff members joined this gathering to meet their old friends and professors. The Association also held its Annual General Meeting to present their annual activity report in this occasion. Graduates are welcome to register as a life-member of AAEIE at http://aa.eie.polyu.edu.hk/ to enjoy different on-campus and off-campus benefits, and participate in various kinds of events organized by AAEIE and the Federation of PolyU Alumni Associations.
20th Congregation and Departmental Graduation Tea Reception 2014

The Faculty of Engineering held its 20th Congregation on 13 November 2014 to celebrate the graduation of 288 students from the EIE undergraduate and postgraduate programmes. It was our great pleasure to have Mr Peter Lam, Managing Director, Engineering, Hong Kong Telecommunications (HKT) Limited, as the Guest of Honour to make the congratulatory address at the graduation ceremony. On the day our graduates, including the recipients of the Best Academic Performance Award, the Technical Excellence Award and the Outstanding Presentation Award, also joined the Departmental Graduation Tea Reception to reunite with professors and their fellow classmates.
Formed by a group of EIE students, alumni and staff, the EIE Dragonboat Team participated in the Stanley International Dragon Boat Championships every year since 2008. The Team undergoes months of intensive training and practice to prepare for the international dragon boat competitions for the Chinese customary Tuen Ng Festival each year. They have harvested nearly 20 prizes throughout the years.

Let’s:
• Enjoy dragon boat races during sunshine summer
• Make friends with classmates, alumni and EIE staff

How to join:
Send your full Chinese & English Name, and cell phone number to jason99tsui@hotmail.com
Bachelor of Science (Honours) Degree in Information Security

Programme Code: 42480

Programme Features

The recent advance in information and communication technologies (ICT) has brought people great convenience in their daily life. Data has become one of the most valuable assets to any country and any business which requires careful protection. To protect data security and privacy and to safeguard against the risk of potentially devastating security attacks and misuses have thus become a vital concern to all countries and organizations. With the cross-border, open-platform, highly-interconnected nature of the cyberworld, the impacts of security attacks and misuses are far-reaching, and would require integral effort from all parties involved in order to effectively combat these attacks.

This Programme aims at producing graduates with:
1. a wide range of professional knowledge and skills relevant to Information Security,
2. creativity and innovation,
3. adaptability to changing technology and society, and
4. all-rounded attributes.

Major Subject Areas:
- Access Control
- Cryptography
- Operations Security
- Security Architecture and Design
- Software Development Security
- Telecommunications and Network Security

Entrance Requirements

An Associate Degree or Higher Diploma from a recognised institution in Information Technology, Computer Studies, Computing, Engineering, Electronic Engineering, Information Engineering, Communication Engineering, Electrical Engineering, Computer Engineering or other similar disciplines.

Application

Apply online via PolyU eAdmission system starting from mid-December every year:
http://www.polyu.edu.hk/admission
Programme Code: 42480
Bachelor of Science (Honours) Degree in Information Security

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New 2-year Full-time Government-funded Top-up Degree Programme (to be Offered Starting from 2015/16)

Application

Apply online via PolyU eAdmission system starting from mid-December every year:
http://www.polyu.edu.hk/admission
Programme Code: 42480

The programme aims at providing graduates of electronic and information engineering, electrical engineering, telecommunications engineering, computer science and other related disciplines an opportunity for further study at postgraduate level. Students will embark on a broad choice of core subjects in multimedia technologies, telecommunications, electronic engineering and optoelectronics that enable them to meet new challenges and tap new opportunities in relevant fields.

Master of Science in Electronic and Information Engineering (MSc) / Postgraduate Diploma in Electronic and Information Engineering (PgD)

With specialism study option in "Multimedia Signal Processing and Communications"

Mixed-Mode of Study

Students can engage in a full-time (9 credits or more per semester) or part-time study load (less than 9 credits per semester), and may have their study load vary from semester to semester.

Credit Requirement

30 credits (10 subjects) for MSc / 18 credits (6 subjects) for PgD

Duration

Normal Study Period: 1-2.5 years (MSc) / 1-1.5 years (PgD)
Maximum Study Period: 5 years (MSc) / 3 years (PgD)

Online Application for September 2015 Intake

http://www.eie.polyu.edu.hk/msc/application.html

Enquiry

Tel: (852) 2766 6227 / (852) 2766 4184
Email: eie.enquiry@polyu.edu.hk
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Stand out with a professional Engineering Doctoral Degree!

Looking for a way to advance your professional qualifications and credentials? A professional doctoral degree could be a key.
PolyU Engineering Doctorate (EngD) programme combines an applied research project, usually related to the industry, with courses that are directly relevant to the candidate's profession and career path. Successful completion of the EngD will bring significant benefits to the company and the individual.

Key Characteristics of PolyU EngD programme

- A 3-year full-time or 5-year part-time postgraduate programme;
- Co-hosted by the Departments / Division in Biomedical Engineering, Computing, Electrical Engineering, Electronic and Information Engineering, Industrial and Systems Engineering and Mechanical Engineering;
- Targeted for those who are in or are aspiring to be in senior management or principal research and development positions in companies that are involved in science, technology and engineering;
- The curriculum is designed to improve skills in management of innovation and technology, enhance professional competence and expertise in specific engineering fields and strengthen capabilities in research, innovation and technology transfer from a practical perspective;
- Graduates can use the title “Dr” upon successful completion of the programme.
- Details of the programme: www.polyu.edu.hk/study

Programme details:
www51.polyu.edu.hk/e/prospectus/tpg/2015/05001-fd-pd

Online application for September 2015/16 entry:
https://www38.polyu.edu.hk/eAdmission/index.jsf

Application Deadline: 29 May 2015
Enquiries: 2766 5042
denquiry@polyu.edu.hk
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The Hong Kong Polytechnic University
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Department of Electronic and Information Engineering

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