Newsletter March 2005 Issue

Faculty of Engineering

Winner of Undergraduate Entrepreneur

The 6th IT Excellence Awards

Have you ever thought of starting your own business when you are still an undergraduate? A team of our BBA (Information Systems)/BEng (Software Engineering) graduates started their own IT entrepreneurial company when they were still conducting their undergraduate studies. The Company called "Team and Concepts Limited (TnC)" was set up in February 2003 by Mr. David Lee Keng Fai, Mr. Tam Siu Lung and their six other classmates. It is one of the first IT entrepreneurial start-up by undergraduates in Hong Kong and has launched its first product in September 2003. TnC offers Event Information Systems (EIS) to streamline event management in a wide spectrum of event organizers and is now headquartered in Cyberport.

"I came up with the idea of starting my own business when I represent Hong Kong in the 'Start Up @ Asia' Entrepreneurship Contest in Singapore, after winning the championship of YDC E-Challenge 2001, a local business plan competition. Although I won the 'Best Presentation Award', I found that my competitors were extremely superb by really turning their proposals into real products!" said David. Because of this, David and his classmates started to build up their business in 2003 with a start-up fund of HK$20,000, and they were lucky to get sponsorship from HKU, as well as the Department of Computer Science for the office premises and servers. At that time, when they were still in their third year of studies, they developed the "PEM" software. PEM is TnC's flagship product specifically designed for managers of event-rich communities. The system is now in use by HKU, allowing students to access a systematic timetable of all the extra-curricular activities organized by the University, and enroll for those activities on-line.

PEM, recently re-branded as EIS Community, is now marketed to other universities, secondary schools and exhibition organizing companies. It also won the Bronze Award in The 6th IT Excellence Awards (Post-Secondary) initiated by the Hong Kong Computer Society (there was no Gold and Silver Awards in the category this year). The award is aimed to recognize excellence and innovation in IT applications and technologies. The panel of judges, including the Vice-Chancellor of HKU as the Chairman, and representatives from the industry, academia and the government, made the following observation on PEM, "Practical and useful for campuses and other environments. We were impressed by the ability of the student proponents to start up their company and make sales before graduation." David was delighted that PEM's excellence is recognized by the industry, as well as the Society. "This is a great encouragement to all of us for our past perspiration and persistence to quality," he said.





The Vice-Chancellor, Mr David Lee and Mr Tam Siu Lung





David said the essence of a successful business is human resources. If you have talents in your company, you will have the foundation to succeed. When asked about the future plan, David said "Our vision is to productize Hongkong's expertise in event management and provide the best IT products and services in the region. We firmly believe that our EIS family of products will become a leading event management solution in the Asia Pacific region. We know that it will be difficult but we endeavor to apply our best effort to drive and realize it. It will be our dream comes true."

The University of Hong Kong

HKU STUDENTS WIN MABUCHI MOTOR AWARD AT THE ABU ROBOCON 2004

Shu Bong Tai , BEng(ME) II





The Robocon was truly a valuable learning experience. It was exciting, fascinating, fun, intensive, unpredictable and yet frustrating at times.

The preparation for the Robocon Hong Kong Contest started in November 2003. However, progress was very slow at first because this was the first time this competition was held in Hong Kong. At the early stage, we spent a lot of time in the streets of Sham Shui Po and Mong Kok looking for components that might be useful for our robots. Time consuming it might seem, but in fact we learnt some very practical knowledge in the process. In class, the syllabus focuses more on the conceptual aspect and the theory of mechanical components; for the more practical technical issues, such as which component is more commonly used, which size is most convenient, etc, we knew nothing about it. The first time we went to the hardware stores we had to describe to the salesman, "The thing we are looking for is called a nut in English, it's hexagonal with a hole in the middle and has thread for the screw.....". Now I can walk into a hardware store and buy what I need confidently.

We were very lucky to win the local competition. Many other teams had some great machines, however, during the competition, most of the machines, including ours, failed to run properly in the game field probably due to the stage lighting being too strong, thus affecting the infrared sensors used to detect the white line on the ground. Fortunately, one of our machines that did work, called the SLS machine, successfully went into the opponents' bridge gaps in many of the matches and prevented the opponents from completing the bridge.

We represented Hong Kong in the regional competition in Seoul. The Korean trip was an amazing adventure for us. It was very tiring, and yet I enjoyed every bit of it. Our flight to Korea took off at around midnight on the 9th September, and arrived at Seoul at around 4 am in the morning. I thought that we could head straight for the hotel to catch some sleep. But the tools and spare components we brought with us were carried as cargo on the same flight, and had to be off loaded at the cargo terminal instead of the passenger terminal. When we reached the cargo terminal of Incheon Airport at around 6 am, it was not yet operational. So it was not until around 3 pm that we finally got our cargo, which was a wooden box as big as a coffin. The 10 of us carried the huge box onto a bus back to the terminal amid the gaze of puzzled pedestrians.

Although our robot had not been able to win in Seoul, we had truly learnt a lot from other teams. We are determined to solve all the problems we have encountered this year, and will be back again next year!





Engineering Summer Programme

July 18-23, 2005

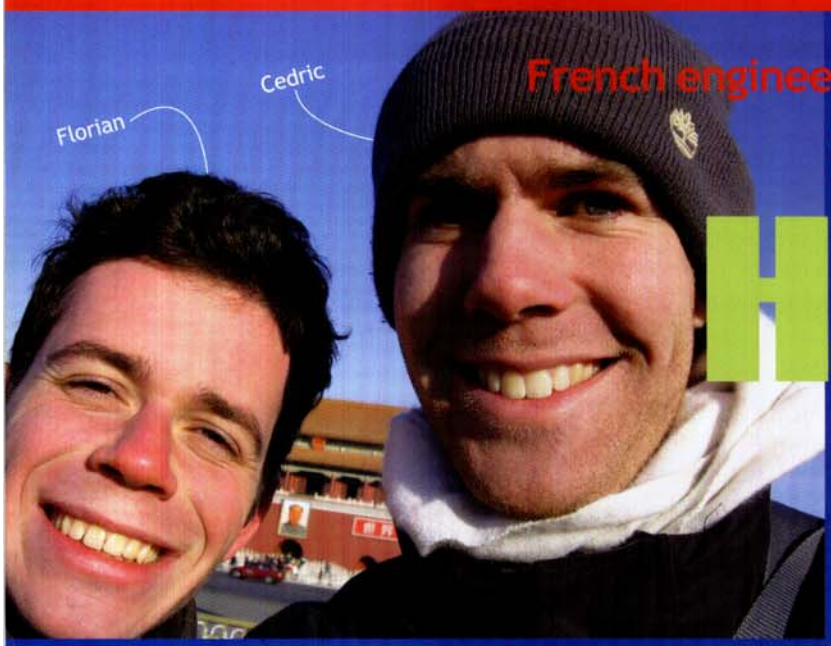
A 3-credit summer programme for high school students will be offered. Topics including The Three Gorges Project, Medical Engineering, Nanotechnology, IT, Hydraulics and the Environment, Logistics will be covered in lectures. There will be laboratory work, field trips and an overnight camp. Please visit: http://engineering.hku.hk/summercamp

HKU Computer Science Students Enter Final of ACM International Collegiate Programming Contest (Asia Regional)

The University of Hong Kong students won first runner-up at the Association for Computing Machinery (ACM) International Collegiate Programming Contest (ICPC) (Asia Regional) which took place in Taipei in November 2004. The team will then move on to the final round competition, which will be held in April 2005, to compete for the overall championship.

The ACM International Collegiate Programming Contest was held in 32 different cities around the world, attracting 4100 teams of outstanding Computer Science students from different participating universities. Seventy-six teams will be qualified for the final of the contest, which will be held in April 6, 2005 in Shanghai.

The University of Hong Kong students took the first runner up award in the Asia Regional session, beating off strong competition from Tsinghua University and The University of Tokyo, as well as teams representing other universities



French engineering students talk about their semester in Hong Kong...

This year, the Faculty of Engineering has 85 exchange students coming from 24 different cities. Let's find out how some French students feel about their study in Hong Kong.

Le Bousse Cedric, studying at the Ecole des Mines de Paris:

"The French and Hong Kong school systems are quite different. In France, there are basically three ways to achieve scientific studies. Firstly, one can go to the university, which is free and accessible to anyone having the French equivalent of the A-level. Secondly, one can choose to apply for a specialized school just after having obtained the A-level. And, lastly, one can choose to enrol for 2 years of "preparatory courses", during which one gets to study theoretical mathematics and physics very intensively, and after these two years, according to the choice of the students and to their results in very harsh competitive exams, they can apply for a "grande école" (engineering school) that is either specialized in a certain subject (computer science, mechanics, etc...), as the "ENSEEIHT" for example, or that has a very large range of different topics (science, engineering, economics, management, law, sociology, languages) as the "Mines de Paris". This kind of schools allows students to open their minds, to have an overview on many different fields before choosing a more specified job, and to be able to communicate with people working on different subjects - as it's often the case in a company."

Dupas Florian Michel, studying at the Ecole des Mines de Paris:

"What I particularly appreciated in HKU was the quality of the courses and of the general "studying environment". How comfortable one can feel in those modern lecture halls equipped with very new devices! Lecturers resort to the tools provided by the computer technology much more often than in France: all lectures result from the interaction of a teacher with efficient PowerPoint files and a - rather! - reliable audiovisual equipment!

All facilities provided on the campus do create a good studying atmosphere and contribute to the general well-being of students. We students from schools of engineering are really not accustomed to this "campus culture", and amazed at how the University looks like "a city inside the city": between two lectures, one can go shopping, enjoy a meal in one of the many restaurants or watch a DVD without leaving the campus! Besides, many events or guest lectures are organized and encourage even more open-mindedness among the students, which have the opportunity to meet and make friends with boys and girls from very different backgrounds and studying in any of the 10 faculties - which is not the case in our engineering schools, where everyone studies engineering!"

Fendri Amine, studying at the Ecole Supérieure d'Electrotechnique, d'Electronique, d'Informatique et d'Hydraulique de Toulouse

"The hall life was perhaps one of the most interesting testimonies of the cultural gap between France and Hong Kong. This famous hall spirit is much weaker in France. We don't have any compulsory hall activities like the different orientation activities or hall festivals. Moreover, I was really surprised by the different formal events like high tables and cheers that are completely new for us. Our halls - when we do live in halls, which is not so common, especially for university students - are more like normal residences where the activities are just organised among the students without any supervision by the residence staff. Nevertheless, the different activities you have in Hong Kong do create a really warm, friendly and convivial atmosphere in the hall. Usually, all the doors are open, and everybody gathers in the pantry!"

Paricaud Benjamin Francois, studying at the Ecole Supérieure d'Electrotechnique, d'Electronique, d'Informatique et d'Hydraulique de Toulouse

"Hong Kong in itself is enough to leave us dazzled! The city is vibrant and seems never to sleep... There is always something new to do or discover here: traditional restaurants, bars in Lan Kwai Fong or Wanchai, or karaoke clubs in Causeway Bay are some of the good reasons for not hanging out alone in one's room! And when the atmosphere of the electric city becomes overwhelming, one can always go for a hike in Lantau, enjoy the beach in Sai Kung or take the ferry to any of the small islands lost in the bay.

The means of transportation are quite reliable and you cannot understand how striking it is for a European to be driven up and down steep roads, dwarfed by skyscrapers or surrounded by jungle-style trees in the very centre of a city!

Finally, the food is much cheaper than in Europe and encourages one to try new dishes in new restaurants every day. The colourful and tasty Cantonese cuisine was a good surprise for most of us!"

An Engineering Perspective of Tsunamis

The earthquake and the ensuing tsunamis on December 26, 2004 were tragic disasters claiming over 200,000 lives. The tsunamis were unexpected and few noticed the early signs nor had they been forewarned. Education and public awareness are crucial to reduce possibilities for loss of human lives if such disasters strike Hong Kong.

Basically tsunamis are long waves propagating at high speed across the open ocean. Long or shallow water waves refer to the regime where the wavelength is much larger than the water depth. Although the average depth in the Indian Ocean is about 3 km, these tsunamis style long waves may reach wavelengths on the order of hundreds of kilometers. However, the height, or the amplitude, of the tsunamis is small in the open ocean and this makes their early detection extremely difficult. These long waves are generated by events of colossal energy release, usually beyond the range of normal engineering practices.

On December 26, 2004, a movement along a faultline approximately 1,200 kilometers long, measuring 9 on the Richter scale provides this energy input. This fault line is oriented in the north-south direction and hence the sliding motion along the fault might momentarily gives rise to a differential in sea level, or a huge wall of sea water in the north-south direction. Gravity and pressure difference will lead to intense mixing, and contribute to the generation of eastward and westward propagating waves. We wish to emphasize that this is a simplified version of a complex process, and the true happening on that day at the epicenter might never be known. Although both small and large scales water waves are generated in principle, classical hydrodynamics predicts that only the long waves can be observed far away from the epicenter, as short waves are effectively stationary.

These tsunamis propagate rapidly across the open sea at a speed proportional to the square root of the ocean depth. Calculations here are consistent with what is observed. From the epicenter to Sri Lanka, the average ocean depth is 3.8 km, and the speed is then 700 km per hour. Note that this is about the same velocity as a modern commercial jumbo jet. These deadly tsunamis need about 2 hours to travel the distance of 1,500 km to Sri Lanka. On the other hand, the Andaman Sea, situated between the epicenter and Phuket, Thailand, is more shallow with an average depth of 0.87 km. These killer waves are accordingly slower at a speed of only 330 km per hour, and strike Phuket in about 1.7 hour. Sumatra is worst hit, as the tsunamis had reached them in less than one hour, resulting in huge casualties.

Near the continental shelf and the shore, their wavelengths decrease rapidly as they have to adjust to the land mass. This fact and the diminishing depth of the sea raise the water level to a dangerous new ceiling, resulting in tremendous wall of water or giant waves that destroy the lives of so many innocent people. The interactions with the sloping sea wall, the 'bending' of the waves of the outlying islands, and the resulting nonlinear dynamics constitute an active field of research, and the Faculty will initiate further efforts into these projects, in conjunction with the Earth Sciences group of the Faculty of Science.

A colleague of the Faculty of Engineering, Dr Paul Y.S. Cheung, Associate Professor of the Department of Electrical and Electronic Engineering, flew to Indonesia to help out with the tsunamis relief efforts in mid January. Dr Cheung went to Camp Jenggala in Lnok Nga, south of the provincial capital Banda Aceh to install a water desalination system, which produces fresh water from sea water. The camp provides accommodation for 500 people and is supposed to be a model for others offering shelter to victims.



Dr Paul Cheung in Aceh



Camp Jenggala in Lnok Nga of the Aceh

Dr Cheung as Head of the Asia Pacific Economics Cooperation Industrial Science and Technology Working Group, bought the water system in the United States and flew it to Aceh. The system could provide 12,000 liters of clean water a day, sufficient for about 3,000 people. However, after the system was installed, Dr Cheung noticed a problem. The equipment has to be installed near to the shore, but many victims refuse to live near to the sea. Dr Cheung realized that it was not what the victims needed most.

Dr Cheung shared his experience in Aceh with over 100 students and colleagues of the University in two sessions held on January 24 and 26, 2005 as part of a campaign co-organized by the Students' Union, the Non-Academic Staff Association and the Employers' Union to offer relief to victims of the disaster.

On reflection, Dr Cheung feels that the needs of the victims come first. The desalination system he had bought was not what the victims most needed, although they require clean water and better sanitation. The people of Aceh who have a daunting task of having to rebuild their homeland display bravery and courage in the face of adversity. "It was an honour to be able to work with the Indonesians in the relief efforts." Dr Cheung said.

A PhD student of the Department of Industrial and Manufacturing Systems Engineering, Mr Ko Wing Yin also took part in the relief efforts in Banda Aceh. As a member of the Medecins Sans Frontieres, Mr Ko arrived at Sigli, a small town in the north eastern tip of Banda Aceh on January 2, 2005. He participated in the search for the missing, coordinated relief efforts among different voluntary agencies to increase efficiency and worked on the provision of electricity and water supply. Mr Ko had previously been involved in relief work in Sudan and Uzbekistan.

A New Computer Science Programme - BEng(CS)

A new programme of BEng(CS) will be launched in 2005. It combines the best elements of the BSc(CSIS) and BEng(SE) programmes to form a curriculum that is timely, practical, and essential for the aspiring students and future IT professionals. From the BSc(CSIS) programme, the new programme preserves all the fundamental concepts and theories of computer science which continue to serve as a strong foundation for many new technologies and advances in computing. The new programme also adopts the best elements from the BEng(SE) programme, which are the various techniques and methodologies for a engineering approach to developing high quality software. For more information, please visit http://www.cs.hku.hk.



Engineering Mentorship Day

The Engineering Mentorship Day was held on January 25, 2005 in Rayson Huang Theatre to provide an opportunity for Year 1 students, their Non-Academic Tutors and their Peer Mentors to get together. A new Peer Mentorship Scheme was also launched on the same day. Under this Scheme, each freshman will have a Peer Mentor who is a student on the Dean's Honours List. Peer Mentors who have just been through the hurdles of adjusting to university life are in the best position to offer advice and tips to freshmen. Students may also find it easier to talk to their peers when they have a problem or need someone to share their thoughts. Over 230 staff and students attended the gathering and had a great time.

Reciprocal Recognition Agreement between the HKIE and the National Administration Board of Engineering Registration (Structural) of the Ministry of Construction

Congratulations to Dr Francis T.K. Au and Dr D.J. Guo, who passed the examination and got the qualification of Class I Registered Structural Engineer from People's Republic of China. They both attended a training course and an examination in Guangzhou organized jointly by HKIE and the Ministry of Construction for reciprocal recognition of structural engineers in Hong Kong and the Mainland. Together with Mr Peter K.K. Lee who got this qualification through reciprocal recognition through IStructE some years ago, there are three members of full-time staff in the Department of Civil Engineering with this qualification.

To prepare BEng graduates to better explore the opportunities made possible by CEPA, a new elective course "Engineering Practice in Mainland China" will be offered in the second semester of 2004-05. The course will be taught by Dr H.J. Pam together with Adjunct Professor H.K. Ng and part-time lecturers Mr Philip S.F. Kwong and Dr Morgan W.W. Yang. Both Prof. Ng and Mr. Kwong have got the qualification of Class I Registered Structural Engineer in the Mainland. Incidentally Mr Kwong also got this qualification in the examination in November 2004 held in Guangzhou.

Engin' Nite 04

Annual dinner of the engineering students "Engin nite 04" was successfully held on 5th October, 2004. Over 100 Students, alumni and teachers had a very memorable time. Honorary guests of the evening included: Ir Dr Hon Raymond Ho Chung Tai JP, Ir Dr Lo Wai Kwok and Mr Edmund S. L. Sung.

4th International Symposium on Environment Hydraulics

The Department of Civil Engineering organized the 4th International Symposium on Environment Hydraulics and the 14th Congress of Asia and Pacific Division International Association of Hydraulic Engineering and Research with some 300 participants from 26 countries during the period December 15-18, 2004.

Upcoming Events

Reunion Dinner

HKU Engineering Alumni Association and the Engineering Faculty will jointly organise an Engin' Home-coming Spring Dinner.

Date: April 12, 2005 (Tue)
Time: 7:00pm
Venue: Loke Yew Hall, HKU
Admission Fee:
HK$350 per person
HK$4,200 per table of 12 persons
Enquiries & Table Reservation:
Mr. Jonathan S. K. Chan
Contact no: 6015-4650;
E-mail: keichan@graduate.hku.hk



Kenneth Kin Yip Wong

Assistant Professor

Department of Electrical and Electronic Engineering
The University of Hong Kong

My first 17 years of life was just like a typical Hong Kong school boy, studying at the same place for both primary and secondary school until F.6, and then I continued the study at Brisbane, Australia and received my combined B.E. (1st class honor with medal award) degree in electrical engineering and B.S. degree in physics from the University of Queensland, in 1997. I received my M.S. degree in 1998 and the Ph.D. degree in 2003, both in electrical engineering at Stanford University. My research interests are dense wavelength-division multiplexing (DWDM) systems, sub-carrier multiplexing (SCM) optical systems, fiber nonlinearity, and fiber optical parametric amplifiers. I then worked in the Bay Area at Hewlett Packard Laboratory as a research engineer for one year.

Frankly, I still can't believe that I'm now working as an Assistant Professor, neither do my friends. If you asked me 7 years ago (before I went to Stanford), it was almost impossible that I'd pursue PhD study; if you asked me 2 years ago (close to the end of my PhD degree), it was improbable that I'd work as a faculty member. However, it was such an amazing arrangement that I was "guided" back to The University of Hong Kong and I'm really grateful to be here. I strongly believe I have a mission, although not a high sounding one, to transform at least some students that I'll come across by sharing with them my experience and enlightening them in some ways. That probably is my philosophy of purpose-driven life.

Croucher Advanced Study Institute : Frountier Research on Nanomechanics II

Date: May 17-20, 2005
Venue: Lecture Theatre A,
Chow Yei Ching Building, HKU
Email: enggfac@hku.hk
Website: http://engineering.hku.hk/new/asi2.htm

in Hong Kong. The HKU team will enter the final round, together with the champion team from Shanghai Jiaotong University.

Team members included Tse Chi Yung (Information Systems/Software Engineering, year 4), Tam Siu Lung (postgraduate student) and Liu Chi Man (Computer Science and Information Systems, year 2). The HKU team solved a total of 7 problems out of 10 within 779 minutes and led for more than 80% of the time during the competition. The team from Shanghai Jiaotong University only wrestled the lead away from HKU within the very last hour by solving the 8th problem, using a total of 1197 minutes.

A second HKU team with members won the 5th place in the competition. A third HKU team received an honourable mention.

Professor T S Ng, Dean of HKU's Faculty of Engineering, is very pleased with the results. "This is the world's premier university competition in the computing sciences and engineering," he said. "We congratulate the HKU teams on their exemplary performance in the competition, and also thank Dr K.W. Chong of the Department of Computer Science for being the coach."

Here, we would like to wish the very best of luck to the HKU team in the ACM Programming Contest World.

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Honours & Awards 2004



Dr F.T.K. Au
Department of Civil Engineering
Best Teacher Award
[By Faculty of Engineering, HKU]

Prof. Y.K. Cheung
Department of Civil Engineering
IACM Award
[By The International Association for Computational Mechanics]

Prof. Y.K. Cheung
Department of Civil Engineering
APACM Special Award for Senior Scientists
[By Asian Pacific Association for Computational Mechanics]

Prof. H.H.P. Fang
Department of Civil Engineering
Outstanding Research Student Supervisor Award
[By HKU]

Prof. J.H.W. Lee
Department of Civil Engineering
Outstanding Researcher Award [By HKU]

Dr X.Y. Li
Department of Civil Engineering
Outstanding Young Researcher Award [By HKU]

Dr D.W.L. Cheung
Department of Computer Science
The Centre of E-Commerce Infrastructure Development (CECID) was awarded the Certificate of Merit (Product Category) at the ***6th IT Excellence Awards for SMEs*** with their open source ebXML business-to-business (B2B) Messaging Server, Hermes [By Hong Kong Computer Society]

Dr F.C.M. Lau
Department of Computer Science
HP Mobile Technology for Teaching Grant Award

Dr T.H. Tse
Department of Computer Science
Ministry of Education Nominated State Science and Technology Award
[By PRC]

Dr K.T. Chau
Department of Electrical and Electronic Engineering
University Teaching Fellow [By HKU]

Dr R.Y.K. Kwok
Department of Electrical and Electronic Engineering
Outstanding Young Researcher Award [By HKU]



Dr J.C.M. Ho and Dr H.J. Pam
Department of Civil Engineering
HKIE Transactions Prize (Young Engineers)
[By HKIE]



Miss Vicky Chan Wai Kei
Year 2 student in BEng(CivE) Programme
Department of Civil Engineering
Gold medal at the Mistral Women event of the 3rd World University Sailing Championship Competition in Izmir, Turkey

Mr Kwok Tik Man (2003 graduate)
Department of Civil Engineering
Prize for Undergraduate Student in Geotechnical Subjects [By HKIE Geotechnical Division]

Dr Rahman Md. Motiar
Department of Civil Engineering
Outstanding Research Postgraduate Student 2002-2003 [By HKU]

Mr Matthew Szeto-Ka-Tsun
Year 3 Student in BEng(LESCM) Programme
Department of Industrial and Manufacturing Systems Engineering
Outstanding Service Award for Tertiary Students 2003-2004 [By HKSSA]