Welcome to e-News! The Department of Computing (COMP)'s electronic newsletter will appear biannually. The purpose of this newsletter is to keep you informed on the achievements of our students, staff, and alumni. Their various undertakings are a tribute to their success and serve to illustrate the wide range of endeavors that an education in computing makes possible.

COMP’s e-News also contains notices of upcoming conferences, launches, and new departmental undertakings. In the fast-moving world of computing, it will help to inform you of opportunities to keep up with the latest happenings in the field.

In addition, we hope to help spread the department’s message of making this world a better place through computing and information technology. The uses to which computing and IT can be put to improve every aspect of life are indeed endless. That this is the end goal of developing technology is a message we wish to emphasize.

Finally, we hope that COMP’s e-News will serve as an important bridge to getting know you better and to helping all of us get connected. Therefore, whether you are our student, academic partner, industrial partner, prospective student, or alumni, we would be pleased if you would send us a few words and share any good news that we may report in our next issue. Happy reading!

Prof. David Zhang  
Head of the Department of Computing
The opportunity to involve ourselves in community service is available to each of us. However, the chances of being able to use our professional skills to serve the community can seem few.

That we would be able to do so was the hope and aspiration of the Community Outreach Merit Program (COMP), led by Dr. Vincent Ng, Dr. Stephen Chan, and Dr. Grace Ngai. Last summer Dr. Ngai, Dr. Chan and Prof. Lu Qin, along with a group of student volunteers, traveled to the city of DingXi county in Gansu province to provide assistance to the Jubilee Cares Primary School in the town of Chankou.

During their visit, the COMP team successfully set up a computer lab for the school, with a solid IT network and infrastructure. They worked for long hours on each day of their seven-day visit, in addition to having spent a great deal of time beforehand in planning the logistics of implementing their project.

The COMP team also worked with the local teachers and students, arranging computer lessons and other activities to enhance their IT knowledge. According to Dr. Ngai, “It was a rewarding experience and valuable journey for not only the teachers but also the students.”

“The students are all orphans,” second-year COMP student Gillian Lam recalled, “yet their enthusiasm and hospitality touched my heart. Soon, we established strong bonds with each other and they even insisted on helping me to pack and carry my luggage on the last day. Time flew, and it was truly sad when our visit had to come to an end.”

“It was good to see that some of our students gradually improved their leadership skills when they were asked to handle a class,” Dr. Chan added. Gillian agreed, saying, “My presentation skills have also improved.”

This summer, in August 2009, COMP will return to Jubilee Cares Primary School to train the local teachers and to help set up an information system to automate the school’s library. In addition to the library information system, the COMP team will also be installing an e-learning classroom for them and helping them to plan a year-long IT curriculum for one of their classes. In the longer term, the COMP team aims to establish a self-sustaining team of local teachers and students who are equipped with the necessary knowledge and skill sets to manage and run their own IT curriculum and infrastructure in the school.
PolyU’s Department of Computing is committed to promoting IT and education

The Department of Computing co-organized the “IT and Education Roundtable Seminar” held on PolyU Campus on 21 April 2009 with the Office of the Hon. Samson Tam (Information Technology) and the Hong Kong Association for Computer Education.

The purpose of the seminar was to discuss the importance of e-learning and its effect on Hong Kong’s education sector; how to improve the quality of education and enhance the competitiveness of local talent with e-learning; and how the Education Bureau can support e-learning in researching and developing information technologies.

Special guests included Hon. Samson Tam (ITFC), Mr. Kenneth Chen, JP, Under Secretary for Education and the Chairman of the Working Group on the Development of Textbooks & e-Learning Resources, Hon. Regina Ip and Mr. Cheng Che Hung, President of The Hong Kong Association for Computer Education. Prof. David Zhang, Head of the Department of Computing joined the seminar as well. During the seminar, they shared their thoughts with the IT sector, education sector and publishing sector.

The principals of various primary and secondary schools attended the event and renewed their efforts to further promote education and support the development of information technology.
PolyU played host to a distinguished seminar on The Intelligent Airport project

Prof. Alison Richard, Vice-Chancellor of the University of Cambridge, gave a speech on 24 March 2009 at The Intelligent Airport (TINA) project distinguished seminar jointly organized by the Department of Computing of PolyU and the Friends of Cambridge University in Hong Kong.

PolyU President Prof. Timothy W. Tong also welcomed Prof. Richard and her colleagues at the opening of this seminar. He also congratulated Cambridge University on its 800th anniversary, and said that "The TINA project is an excellent example of how applied research serves to make our world a better place to live in."

TINA is a large applied research project funded by the UK Engineering and Physical Sciences Research Council and led by the University of Cambridge. The project has strong support from industry, and the project team has been collaborating with Arup, BAA, Boeing, Laing O'Rourke, Motorola, Red-M, Tyco, and Zinwave. Cambridge alumni and PolyU students and researchers also collaborated and provided support.

The main speech during the seminar was delivered by Prof. Jon Crowcroft, the Marconi Professor of Communications Systems in the Computer Laboratory of the University of Cambridge and a key member of the TINA project team. Dr. Henry Chan of the Department of Computing also presented the work of PolyU students on the TINA project during the seminar.

The seminar was attended by Cambridge alumni in Hong Kong, PolyU students and staff, as well as people from industry.

After the seminar, Prof. Crowcroft had a tour of our research labs and saw a demo of the HAWK test bed.
Seminar on Building a Smarter Planet

Ms. Josephine Cheng, the Vice President of IBM Almaden Research Center in San Jose, California, was recently invited by the Department of Computing to share her experiences and views on how her company has worked with their clients to build a smarter planet. The seminar was well received, and drew attention to IBM’s view of how interconnected technologies are re-shaping the way our planet functions. “Our world is getting smaller and flatter, but is still not connected enough. IBM is working on specific ways to make our planet better connected, by infusing intelligence into systems, processes, and infrastructure that enable physical goods to be developed, manufactured, bought and sold, as well as providing seamless delivery of services,” said Ms. Cheng.

8th IEEE International Conference on Cognitive Informatics (ICCI 2009)

The human mind has amazed and confounded generations of scientists and philosophers. Great discoveries in the field of cognition combined with technology have not led to end solutions. Rather, they have opened up new doors and future possibilities.

As a step forward to realizing these new possibilities, this year the Department of Computing hosted the 8th IEEE International Conference on Cognitive Informatics (ICCI 2009). Heading the program for this year’s conference were four elite professors from the Department of Computing: Dr. George Baciu, Dr. Keith Chan, Dr. Jane You and Dr. James Liu.

Pursuing the course of the past seven successful conferences, this year’s conference largely focused on Cognitive Informatics (CI); a transdisciplinary approach to research that ties cutting-edge technology to the complexities of the human mind.

ICCI 2009 took place place from 15-17 June 2009 at the Senate Room M1603 inside the Li Ka Shing Tower, PolyU.
Prof. David Zhang, the Head of the Department of Computing, has been elevated by the Institute of Electrical and Electronics Engineers (IEEE) to the position of IEEE Fellow in 2009 for his contributions to biometric identification and systems. The IEEE is the world’s leading professional association for the advancement of technology. Prof. Zhang is the Founding Director of the Biometrics Research Lab, which has been supported by the Hong Kong government since 1998. He is a Croucher Senior Research Fellow, a Distinguished Speaker of the IEEE Computer Society, and a Fellow of both the IEEE and IAPR.

Dr. Lou Wei and his working team have been awarded a grant of RMB200,000 from Zhejiang University’s State Key Lab of Industrial Control Technology for the research project entitled “Designing Secure Localization Schemes Against Wormhole Attacks in Wireless Sensor Networks.”

The Department of Computing’s own Dr. Allan Wong was awarded the Highest Growth Consultant Award for his involvement in consultancy activities over this past year.

The Department of Computing has won the silver prize for Best Professional Development (Product) at the Hong Kong Information and Communication Technology (ICT) Awards 2008, for an entry supervised by Dr. Vincent Ng.

The project was commissioned by the Education Bureau to develop a learning and teaching resource package for the elective option of “Multimedia Production and Website Development” for the New Senior Secondary ICT curriculum.

The Hong Kong ICT Awards, introduced in 2006, recognizes and promotes outstanding achievements by local ICT professionals and organizations. This year, the awards received 348 high-quality entries across eight categories.
Prof. George Baciu, Associate Head of the Department of Computing, in collaboration with Prof. Jinlian Hu of the Institute of Textiles and Clothing, won a Gold Award in the 6th International Exhibition of Inventions for their FabricEye™ project.

This fabric analysis system is expected to bring revolutionary changes to the objective assessment of quality in the textiles and apparel industry. A high-resolution camera is first used to scan and capture the surface image of fabric samples. Then, an analysis and grading of the fabric is performed according to international standards. The project was supported by a HK$2.5 million grant from the Hong Kong Government’s Innovation and Technology Fund.

**President’s Awards for Achievement**

Each year PolyU recognizes those teachers that go above and beyond the expectations of simply teaching a class.

This year the Department of Computing was honored to have seven of its elite professors win the President’s Award for their involvement in the Community Outreach Merit Program (COMP), a community service initiative to apply IT knowledge where it is most needed.

COMP is led by Dr. Vincent Ng, who works closely with Dr. Grace Ngai, Dr. Stephen Chan, Dr. Hong-Va Leong, Dr. Henry Chan, Dr. Korris Chung, and Dr. Simon Shiu.

The President’s Awards were presented on 24 November 2008.

**Gold Award for FabricEye**

- **Prof. George Baciu, Associate Head of Department**
  
  *(in collaboration with Professor Jinlian Hu, Institute of Textiles and Clothing)*

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Going through life is never easy, but there are people around us who face challenges every day that most of us will never encounter, and who manage to deal with them courageously. This is the case with Lau Hiu Fung, who was recently awarded the Sir Edward Youde Memorial (SEYM) Award for Disabled Students.

Lau Hiu Fung was invited to apply for the SEYM Award after being admitted to the Department of Computing for his undergraduate studies. Following an interview with the awards committee, Hiu Fung was bestowed the award based upon his strong prior academic results and his vision for future contributions to the university and the field of computing.

Hiu Fung has long had a strong interest in computing and believes that computing technologies can help people with disabilities to lead a better life. Indeed, Hiu Fung faces many challenges with his own disability, which keeps him confined to a wheelchair. Due to his limited muscle power, he gets tired easily, but Hiu Fung is grateful to those around him who have been so willing to offer him help. He suggests that all people think positively and be willing to try anything. “If you are willing to try, everything is possible.”

Hiu Fung is honored to have received such an award and has only praise for the Department of Computing. All of the department’s classrooms and facilities are fully equipped to meet the needs of individuals in wheelchairs as well as with other disabilities. Furthermore, Hiu Fung is thankful to the department for encouraging him to apply for the SEYM Award.

Hiu Fung was awarded the Sir Edward Youde Memorial (SEYM) Award for Disabled Students on 15 March 2009.
The Department of Computing continues to concentrate on high-quality research, which is fully in line with the university’s strategic emphasis on applied research. We focus on multidisciplinary research by strengthening our efforts in developing selected areas of research that will ultimately lead to international recognition and facilitate technology transfers. In a recent survey published by the Association for Computing Machinery in the U.S.A., the Department was ranked first in Hong Kong, second in Asia, and 36th in the world for contributions in Software Engineering.

Prof. Jiannong Cao, Associate Head of the Department of Computing, and his working team received a grant of HK$6,700,000 from the Innovation and Technology Fund (ITF) in 2007 for their project on “Seamless Communication and Mobility in Heterogeneous Advanced Wireless Networks” (HAWK).

The group developed HAWK, a real-world implementation of high-performance heterogeneous wireless networks for ubiquitous internet access. A full-feature test bed was built, integrating different wireless networks, including the Wireless Mesh Network, WiFi and a 3G network. Dual-mode mobile clients can access the internet via any of these networks and can roam seamlessly across these networks.

This year, as an extension of the above ITF project, Prof. Cao’s group successfully obtained another ITF grant of HK$6,447,750 to develop security solutions in the same area of research. The objective is to develop techniques to defend against potential security threats, while maintaining the required quality of service. These techniques include secure and efficient protocols for handoff across different wireless networks, solutions to improve the security level of multi-hop communications in wireless mesh networks, as well as mechanisms to mitigate security flaws that might occur during the exchange of context information when applications migrate across diversified network infrastructures and various portable devices.
Research Highlights

The Department of Computing has recently developed an innovative tongue image acquisition and analysis system based on medical biometric authentication. According to Chinese medicine, the health of organs can be easily revealed by the appearance of our tongue, and an automated tongue image acquisition and analysis system could facilitate tongue diagnostics.

The project was made more complicated by the fact that no standardized guide was available on the acquisition of images of the tongue. Many images with distorted colors were collected, which affected the making of accurate analyses. The Department hopes to improve the situation by developing this pioneering tongue imaging system. Combining technologies of computer vision, image acquisition, medical image analyses, and data mining, high-quality images of the tongue can now be acquired and analysed by the computerized system. This means that diseases like pancreatitis and appendicitis can be identified earlier.

Innovative Tongue Imaging and Analysis System

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The Advanced Enterprise Infrastructure Lab

The Department of Computing launched the Advanced Enterprise Infrastructure Lab on 25 November 2008. It is sponsored by Cisco, the world leader in networking, and by the Cisco® Gold Certified partner, Macroview Telecom, a professional provider of Internetworking solutions. The Lab allows students, teaching staff, and University researchers to use advanced networking technologies to develop innovative enterprises, e-commerce, unified communications, and wireless applications that will help to enhance the competitiveness of various businesses in Hong Kong.
STEP – Student Transition and Employment Preparation
All-roundness is the Key

STEP is an integral program that is committed to cultivating our students and developing their potential through information sessions, a website, and individual coaching in job hunting techniques. “We hope that graduating students can better equip themselves to enhance their employability and develop their professional careers in this increasingly ever-changing environment.”

As Dr. Ng stated, “We have been running STEP formally since 2003. We hope that, through STEP, we can give fresh graduates more solid opportunities to work in some renowned companies, associations, government bodies, and NGOs in town.”

While COMP students are technically well trained, Dr. Ng has stressed that their communication and interpersonal skills need to be sharpened. “It is the key nowadays. That’s why we are planning to train our students to be all-rounded, using STEP as a standardized channel to meet the requirements of the companies,” he said.

In a time of financial crisis, setting a vivid goal for students is as crucial as getting them a job. Dr. Ng has a few ideas about how to do both. “Firstly, strengthening both the academic development and soft skills of the students; secondly we are already in the line of creating more job opportunities through our alumni members, who are willing to share their experience with our students; last, but not least, I personally have been talking with various company heads to generate further recruitment opportunities.”

Dr. Ng is now busy with a series of upcoming training workshops focused on boosting practical working skills, to which he will invite representatives from the IT profession and alumni members. “I am more than pleased to help our graduates seek a bright future,” he concluded.

Consultation Day

Each year, Hong Kong’s Form 7 secondary students must make a choice that will inevitably affect not only their career path, but also their life path. Such is the role played by the JUPAS Application.

With this year’s Consultation Day, The Department of Computing has made life easier for future computing students by giving them the opportunity to understand the department and its professors in advance.

Professors worked directly with prospective students to determine their suitability for the department’s many programs. Prospective students also spoke with current computing students and viewed several Final Year Project Exhibitions.

Consultation Day took place on 23 May 2009.

Graduation Dinner

Another year has gone by. During this time, there have been many success stories in the Department of Computing with regard to research and teaching, but the most important product of the department’s efforts has been the students themselves.

This year’s Graduation Dinner gave current students and alumni the opportunity to come together and share their personal experiences during their time with the Department of Computing.

We were honored to have Prof. H. C. Man, Associate Dean of the Faculty of Engineering, give a speech to our graduating students, which contained much valuable information and advice. Industry professionals Mr. Ng Cheung Shing of Computer And Technologies Holdings Limited and Mr. Edward Lee of CISCO Systems also spoke during the event and shed light on the future of computing as well as on the current employment situation.

The Graduation Dinner took place on the evening of 20 May 2009.
As we all know, the world of computing is more than writing programs and spending hours in front of a computer monitor. However, many prospective students may see our world according to this stereotype. In fact, computing presents a world of opportunities to both exercise one's creative imagination and solve real-world problems.

In response, the Department of Computing regularly arranges lab tours for secondary students to experience the home of the future in the Intelligent Home Lab or the power of Artificial Intelligence in the Biometrics Lab. Students can also encounter the future of entertainment in the Game and E-toy Labs.

Each lab tour is a potential stepping-stone for students to develop an interest in the exciting world of computing.

The Charles Babbage Final Year Project Awards 2008-2009

Each program in the Department of Computing is taught using innovative and practical models. What ties together these many models is the industrial final year project that every student must undertake in order to graduate.

For this year’s competition for the Charles Babbage Final Year Project Awards the field was narrowed down to six top students. Each presented his/her project to a panel of judges, consisting of Dr. Alvin Chan and Dr. Heraton Leung, along with industry professionals, Mr. Stephen Wong and Mr. Jefferson Wat.

After a thorough evaluation, Wan Hok Man won the Distinguished Award for his project on “Role-based Group Assignment Support” for the Hong Kong Police Force. Key factors in selecting Wan’s project included the significant benefits that such a project can bring to society, and the prospects for research, development, innovation, and commercialization.

Tam Ka Kin won the Innovation Award for his project on “Design of an Opinion Based Search Engine,” in recognition of the fact that the creation of such new technologies can bring about significant advancements in IT. The Technological Achievement Award was presented to Lam Yuen Mei, for her project on a “QRBook Library System.” Her work was regarded as being a practical application of IT that uses existing technology to significantly enhance our society.

Each of the other students, Chung Chi Pang, Lau Hiu Fung, and Ma King Yiu, won Merit Awards in acknowledgment of their superior work.

The Charles Babbage Final Year Project Awards 2008-2009 were awarded on 23 May 2009.
**New Executive Committee Elected**

The new Executive Committee of the 6th Computing Alumni Association was successfully elected on 15 November 2008. The composition of the new committee is as follows:

*CAA Executive Committee Members for 2008 – 2010*

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<tr>
<th>Role</th>
<th>Name</th>
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<tr>
<td>President</td>
<td>Chan Kim Chung, Daniel</td>
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<tr>
<td>Vice President</td>
<td>Ho Chi Kong, C. K.</td>
</tr>
<tr>
<td>Honorary Treasurer</td>
<td>Yeung Suk Fan, Sue</td>
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<tr>
<td>Honorary Secretary</td>
<td>Wong Kwok Keung, Stephen</td>
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<tr>
<td>Membership Officer</td>
<td>Cheng Hon Leung, H. L.</td>
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<tr>
<td>Public Relationship Officer</td>
<td>Fan Wing Ying, Priscilla</td>
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<tr>
<td>Publication Officer</td>
<td>Choi Kwok Kee, Kenneth</td>
</tr>
<tr>
<td>Recreation Officer</td>
<td>Chiu Leung Fai, Fritz</td>
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They will build on the good work of the previous members, to promote the association and build membership networking for the coming years.
If you are interested to know more about the Department of Computing (COMP), please feel free to contact us.

Email: enquiry@comp.polyu.edu.hk  Website: http://www.comp.polyu.edu.hk/

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**Upcoming Events**

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**Summer Camps – VR & Robotic & IO**

Each year, the Department of Computing organizes summer camps for local primary and secondary students.

*Virtual Reality Camp*

Students engage in computer animation and game production, and create their own production in this five-day camp.

*i³ Learn Group Summer Camp*

A five-day camp with the theme “Caring and the Environment” that builds eco-awareness in students through exercising their creativity using robotic programming, electronic technologies, and intelligent clothing to make their own robots or design.

*Innovation Odyssey Camp*

Inspires creativity in today’s youth through interesting activities such as movie making, games, toys, and robots.