Dr James Liu joined the Department of Computing in 1994. This August, he has just retired from his post after 20-year dedication to teaching, research and services. He is known for his passion about education and his time and effort for MSc programme administration and development. In recognition of his outstanding teaching performance, he was honoured the Faculty Award for Outstanding Performance/Achievement in Teaching in 2012/13.

“My biggest satisfaction comes from research on forecasting technology. Technologies grow rapidly which eventually facilitate my study and research, and there are always new approaches that would evolve to replace the old ones.”

Could you tell us your education background?

I got all my degrees from Australia. My first degree in Mathematics was completed in 1982 at Murdoch University in Perth (In Australia, the degree program takes four years: a three-year plus a one-honor-year program). I obtained the “Commonwealth Postgraduate Scholarship” to complete my MPhil degree in Applied Mathematics at the same University, and my research area was computer simulation on weather system. Afterwards, I needed to seek a PhD offer from another university as I changed my discipline from Mathematics to Computing. As not every university would accept a Mathematics graduate to take their Computing PhD degree, I pursued my PhD study at the La Trobe University in Melbourne supported by the same scholarship. But then I found a full-time job in the Defense Department in Melbourne, thus I changed my PhD degree to part-time mode two years after. My PhD was completed in 1990 and I came back to Hong Kong in 1994 to join PolyU.
You are particularly interested in Forecasting Technology, Web Intelligence, Agent-based Computing and Multilingual System Development. Why are you so interested in them and what gives you the biggest satisfaction while working on them?

Forecasting Technology
I remembered that my Final Year Project was related to the environmental life science area. I tried to simulate the air pollution from several regions in Western Australia by applying different models to the project. The pollution was affected by a huge amount of weather factors, such as wind speed, wind direction as well as other meteorological parameters. That was the time I started to investigate forecasting technology, back in 1981. My MPhil study involved simulation as well, which was about the simulation of the sea breeze. My project employed weather forecasting models which were being used by big agencies in the US. Simulations were done by decoding the message with the source code provided. I studied the models by reading and practised operating the system at night time. Do not forget it was in the early 1980s when computer facilities were not common at all! This was a very valuable experience and strengthened my knowledge in utilizing sophisticated models of simulation. I found it interesting when I could get sensible and sound simulation output after a long trial and error period. This proved my effort was not spent for nothing. I always relate this feeling to playing computer games when I share with my colleagues and students, and this is actually a good way to motivate them to work harder with fun!

I keep working on research focusing on weather forecast till now. One of the close collaborators of my research is the Hong Kong Observatory (HKO). HKO is a good source of all kinds of weather data, and they need partners to analyse and convert them into useful information. In the past, they charged us for providing the data. But now they are willing to offer the data for free, and even share their experiences with us. The research approaches have changed as well. In the old days, people tried to incorporate physics into models (the so-called “real models”). Forecasts were made in connection with mathematics and equations which are created to simulate reality. Nowadays, people would do measurements and simulate with the statistical data collected.

attending The IEEE World Congress on Computational Intelligence in July 2014 in Beijing

To equip our students with the latest knowledge of simulation model in weather forecast application, we have worked with HKO to provide placement opportunities with full financial support for our students. Students could learn from the staff as well as operate the advanced equipment for collecting wind shear data at the Hong Kong Airport.

Multilingual System Development
Hong Kong is a special place where East meets West. And the collaborations among different parties from all over the world have been tightened after the handover in 1997. This enhances the development of multilingual systems. I was able to take part in the development at PolyU as it spearheaded the exchange with Mainland and Taiwan universities, where they used Chinese computing instead of English. And this is where the multilingual system development began.

Agent-based Computing
Agent-based computing is a kind of modeling framework which uses the agent concept to simulate the behavioral interactions and assess their effects on a system as a whole. We have developed some tools that can be used to simulate those behaviors, which were successful and innovative in the 1990s. These tools also supported some research projects and generated output as system and publication. Furthermore, some students chose this as their FYP topic. This is the development history of Agent-based
Computing from early 1990s to 2000.

It is of no doubt that my biggest satisfaction comes from the forecasting aspect, in particular the project with HKO and the Hong Kong Airport. The project is equipped with advanced technology and laser related equipment; massive data is collected (we are still using this data nowadays for big data experiment); theory related to turbulence, wind shear and even the Chaos Theory are involved. After numerous times of experiments and data verifications, we are able to simulate the occurrence of the wind shear eventually. The system is able to predict what will happen, which is really heartening!

“I am lucky to be one of the awardees. I am serious about teaching as others do, and I am keen on developing an e-learning system to help improve teaching.”

You were honored the Faculty Award for Outstanding Performance in Teaching (Individual) in President's Awards and Faculty/School Awards 2012/2013. Did it bring any impact to you upon your work or your personal life?

I think I am lucky to receive the award! Indeed, the award is estimable as it covers research (teaching related), projects (whether the nominee has been involved in any teaching projects), and teaching quality, and the comments from students are taken into account too.

Apart from doing research, I am carrying out some teaching projects. One of them is a 3-year project in creating an e-learning system to help both the teaching staff and students. With the use of Artificial Intelligence, the interactions among students, and between students and tutors/lecturers are enhanced. Our system aims to be adaptive and caters for learners’ diversity. And it is developed for education across boundaries.

Talking about the impact to my work brought by the award, I do not think it has much impact on what I am currently doing. I am still doing the same work, supervising the students, teaching in the same way. After all, the award does not treat my stomachache.

“We need to balance students’ needs and our own constraints at the same time.”
You had served as the Postgraduate Scheme Chair in the Department for over 13 years. Could you please highlight and share with us the most important experience and insight?

Sure! We understand that our students have different requirements and needs, so we have to plan and offer them the most efficient mix of courses. I like to discuss with the postgraduate students, especially the full-time local ones, because they are experiencing the fuzziness of being a full-time student. They need guidance and consultation in order to prevent conflicts and ensure smooth operation of our administration.

What gives you the strongest sense of achievement in your work at the Department?

I would consider staying happy as an achievement, especially when everyone is so stressful and always lacks sufficient time nowadays. The key to happiness for me is resource management. Resources include your time, your energy and your budget (not to mention the money in your research account!). So, what matters most is how you make use of them effectively. It should be in a way that you can achieve your goal and you are happy with the outcome. This is just a kind of feeling. And one should get along with changes instead of worrying. I saw a lot of changes throughout my almost 21-year services at the Department. The best attitude is to observe your duties and your needs, and perform in a proper way, and that is it!

“It is never too late if you could stop and think for your own good.”

As you will retire soon, could you share with us your plan on your retirement life?

I don’t see retirement as the end but the beginning to other things. Retirement is good at some points. It is especially true for me who have missed two important times in my life that I want to make sure not to miss the third.

The story started from the time that I decided to return to Hong Kong in 1990. The reason for coming back was my father who suffered a stroke at that time. In fact I thought he would have died at that time as this was his fourth time of stroke attack. So I started to apply for a job and eventually came back in January 1994. But unluckily, my father died in October 1993. So I was late. I still came back as scheduled so that I could spend more time with my mother. But the fact is my time was fully occupied by my work and I did not spend much time neither with her nor with my kids. I still hoped that I could compensate at the time I retire. But in fact in the last 3 years, I spent most of my lunch time at the nursing home with my mother. And I made promise to myself that I would spend more time with her after retirement. But then, my mother passed away in May. So I was late again!

What I want to emphasize is one needs to make a good work-life balance, be healthy and spend reasonable time with your family. I’d like to borrow words from other people. Our current number two (Chief Secretary) in the HKSAR Government, Mrs. Lam said in an interview “What will you be doing after you finish your position, as a woman trying to get to the number one?”. “No, I won’t be, I don’t want to be the number one. I am not interested to be the number one.” “After this one,” she said, “I will retire, and I will keep back myself one piece to my husband.” I should do the same maybe. I will give more time to my wife and my kids, and make sure myself to stay healthy.

Though I am retiring now, I will still be around for a few years. I would like to see my current students completing their studies and graduate. Well, one of my students has just started his PhD study, so you will still see me around in the next three years. And this is my plan I think.
Do you have any message you want to leave for us?

We are all busy, but sometimes you need to look back and then try to slow down and think: are you happy? Why is that? Sometimes I think it is affected by your mind as you are too demanding to yourself.

Just look at the people around you, particularly your beloved ones, your spouse and your kids. Please ask yourself: “have I ever overlooked them?” Slow down and think about what is the most important to you? Is it worthwhile to sacrifice them for your current goal?

The last thing I want to share is about investment. As you may know, one of my research interests is forecasting, not only weather forecasting but also financial forecasting. I have used different financial models to simulate the stock market and see whether one’s investment combination is better than the others’. But those financial models can only be used for study purpose, as there are so many uncertainties which make the outcomes unpredictable. Although you can calculate, you still can never be 100% sure that you will win. Stock market is not the only place for investment, we should better invest on developing expertise based on solid knowledge, perhaps something that is not much subject to market fluctuation or speculation.
Interview with Dr. Simon Shiu

Dr. Simon Shiu joined COMP in 1990 and has been the Postgraduate Scheme Chair since 2013. His research areas cover Soft Computing, Case-based Reasoning, and Computer Games Design and Programming.

I am glad to be the first PhD student of Dr. James Liu.

Could you tell us your education background?

I was born and studied in Hong Kong until graduated from the higher diploma programme from Lingnan College. Then I continued my postgraduate studies in England, and obtained two MSc degrees, one in Computing Science and another in System Analysis and Design. I came back to Hong Kong in 1985 and worked in Bondwell Computer Co. Ltd, Star Telecommunications and HK Baptist University successively. The society agitation arose when 1997 got close. The tense relations between China and Britain made many people emigrate at that time. It also affected my company’s business. So, my company decided to relocate to England and I was invited to move along with them. But I wanted to stay in Hong Kong and that was how I get the chance to join PolyU in 1990. I worked as a Lecturer until 1992, when I started my part-time PhD study at PolyU under the supervision of Dr. James Liu. And I am proud to be his first PhD student.

“My research focuses on Computer Games, Web 3D and Applications because I like investigating the interaction between humans and computer.”
There are several reasons. First, my PhD research topic lied in Soft Computing and Artificial Intelligence (AI) which were Dr. James Liu’s research interests. Second, Case-based Reasoning (CBR) actually is one of the topics in AI. When I graduated from PolyU, I wanted to focus my research on a particular area and CBR was hot at that time. Therefore, I chose that topic to further develop my expertise. Moreover, with the development of the Web, networks and reasoning systems, many companies could answer guests’ questions through the Web, or let the employees get the company’s information in a shorter period of time. CBR is an important means to achieve these goals. Eventually I spent about ten years in this research area.

There is a story I wanted to share here:
Once there was an Indian Professor called Prof. Sankar K. Pal who came to COMP as a Visiting Professor. He was an IEEE Fellow (we had no IEEE Fellow in our department at that time) and did research with me during that several months. Afterwards, we published a book named “Foundation of Soft Case-based Reasoning”. Until now, the citation of the book is good. We notice that people in Mainland China love this book and they even put a copy on the internet for free download. This has caused Prof. Sankar K. Pal and me a great loss! We have spent 5 years working on the book, including drawing every figure and emailing authors of cited figures for copyright. Although I use this book in my teaching, no students would buy it as they could download it for free.

There were several things that drove me to Computer games and Artificial Intelligence. First, I am an active person who does not like to deal with rigid machines. I prefer dealing with humans, such as applications between humans and computer. I like human-computer interaction, intelligence system, 3D visual system. Twenty years ago, video games were not as popular as today. Most of them were played on PC when there were no PS3, PS4 and XBOX. Most of the games relied on programming. This area matched my
In your eyes, how will these technologies develop further and move forward in the future?

I think the future of intelligence system, case-based system and computer game is unlimited as there are still a lot of rooms for improvement. There would be a breakthrough in face recognition, capacity of analytical thinking, forecasting and prediction of future. For instance, intelligence analysis can help to address the various challenges caused by the rapidly changing economic, climatic, production, resource control and environmental problems.

Big data analysis and computer games will make intelligence analysis more important. Big data analysis relies much on AI, thus I consider AI has a great potential for further development. For computer games, it will not be simply a kind of entertainment, but will become a necessity to help relieve people’s pressure in the future.

I am 55 years old now and would be retiring in 5 years. Mr. Yingjie Li should be my second last (if not last) PhD student. Other than knowledge in computing science, I hope that younger colleagues and my students could inherit my skills on course management and administration. After all, I have accumulated experience over decades and I believe my skills could be passed on.

“I have been striving to balance the relationship between local and Mainland students.”

dining with Dr Stephen Chan (left) and Dr Alvin Chan (right)
You have taken up the role of the Postgraduate Scheme Chair of the Department starting from the academic year 2013/14. What have you done and what are the most important challenging tasks you anticipate in the future?

There are three challenges. The first challenge is the student mismatch in the MSc programmes. In the past 10 years, 70% students were enrolled in E-commerce (MSc in EC) and Information Systems (MSc in IS); and 30% were enrolled in Software Technology (MSc in ST) and Information Technology (MSc in IT). However, most of our key academics’ research interests are in the area of Computer Science. Thus, I wish I could increase the number of students in MSc in ST and MSc in IT, and reduce the number of students in the other two programmes.

The second one is the cultural and age difference between local and Mainland students. Almost all Mainland students are young full-time students who are fresh graduates while local students are part-time students with many years of work experience. As the Program Leader, I need to plan our subjects to satisfy their needs. There were some discordant cases happened in the past: students from Mainland complained about Hong Kong students having not enough time to work together on the project as Hong Kong students are not available during daytime; while, Hong Kong students complained that Mainland students take too many subjects in one semester and just spend marginal effort on every assignments. Fortunately, with the promotion which has been taken place for more than ten months, we are able to lessen the problem by changing the student mix. This year, we have admitted 210 master students, 180 of them are local students while the rest are mainland students.

The third one is about administrative management. I need to keep my eyes open for the design and operation of course selection, as well as teaching and learning of subjects to avoid conflicts and unhappiness during the process. Among the students in a single subject, there might be students with different background knowledge. Some maybe good at computer programming while others are good at business analysis. Ideally, if students could be separated according to their backgrounds and capabilities, it will ease our work. But due to limited resources, some MSc classes have class size of 80 and more. I hope I can find a better way to handle this in the future.

What gives you the strongest sense of achievement in your work?

I have different goals of achievements in different stages of my life. Twenty years ago, I valued achievements in research outputs, for example, books and journal publications. Self-development was my number one goal. But when I am growing older and witnessing the growth of my children, my sense of achievement now comes from the growth of my students. I have seen three of my PhD students graduated, and there will be a fourth coming. During the five-year study of each PhD student, there are ups and downs. Completion of a PhD degree is a comprehensive promotion of the student. I could see a student advancing every month. The most grateful time of my teaching comes at the time when my student passes the oral exam. At that moment, I feel like I have cultivated a life.

“My teaching styles differ to cater for students from different backgrounds.”
You have supervised a lot of students during the years. How will you describe your teaching and supervisory style, and your relationship with your students?

I consider myself as a flexible person, and my colleagues do, too. I am also a result-oriented person. I do not limit to a particular teaching style. The only concern about teaching is the need of students and how to improve their intelligence and capabilities.

My teaching approach differs with different students. For the freshmen, who do not have enough life or work experience, I act like a strict parent with indoctrination. There would be lots of exercises and assignments for them. I would like to see them master the knowledge quickly and lay a solid foundation for further study.

For the MSc students attending the evening classes, I would concentrate on inspiring them with ideas and applications instead of teaching them basic techniques. Most of them have five to ten years of work experience, and they are more interested in acquiring higher level skills instead of low-level technical skills.

The Mainland students (especially those in the outpost MSc IS programme in Xian and Suzhou) have very different culture and ability when compared to the local students. Many of them are working in a company or a government department. They take our programmes as recommended by their companies and departments and for self-development. I need to consider their unique culture when I teach and share my experience with them. And I have to adjust the use of English for their English level is not as high as the local students. Also, China has its unique IT environment where the students cannot access information freely. So I have to carefully select the teaching materials.

Although I have to adopt different teaching styles to cater for the needs of these students, I am kind to them all. However, I would not be a friend who accepts all their requests. I would like to be friendly, but I always remember my responsibility as a teacher and would not give any tips to them.