Lead Story

2011 QS World University Rankings by Subject: Computer Science & Information Systems Rankings
NUS School of Computing is Top 1 in Asia and 12th Worldwide

Highlight Student Projects

MOG Class
The goal is focused on motivating children to enjoy playing music instruments collaboratively in the music class instead of the complicated instrument technical skills of traditional musical instruments. MOGCLASS turns popular and fancy off-the-shelf mobile devices iPhone/iPod touches into virtual musical instruments by which children can easily create percussion and melody music in groups.

FocloBo
Designed by the group MEWWY from Dr. Shengdong’s CS4348 Interactive Systems module, everyone now has more free time to relax at home instead of being engaged in laundry chores. FocloBo will firstly, help you clip your shirt to their special hanger, secondly, roll your clipped shirt to a board and thirdly, release the shirt for a quick 4 step folding. With FocloBo’s user friendly and intuitive design, it is just so easy to have neatly folded clothes for everyone.

Highlight Research Projects:

- M3R (Multimodal Mobile Music Retrieval)
- PAT (Process Analysis Toolkit) won award
- Reliable Protein Interactomes for Infectious Diseases
- MMQA(Web-Scale Media Search and Multimedia Question-Answering)

Congratulations

Associate Professor Yu Haifeng Wins NUS Young Researcher Award 2011
NUS School of Computing Associate Professor Yu Haifeng has won the Young Researcher Award for 2011. He was conferred the award by NUS President Professor Tan Chorh Chuan at the University Awards ceremony on Friday, 29 April 2011. The previous YRA winner from SoC was in 2008 (Dr. Sung Wing Kin).

Professor David Rosenblum was named in the 2010 class of ACM Fellow
Professor David Rosenblum was named in the 2010 class of ACM Fellow for “contributions to software testing and distributed systems, and for service to the software engineering community”. The selection of ACM Fellows reflects the highest achievements in computing with innovations that are advancing the quality of life throughout society. ACM formally recognized the new Fellows and other ACM awards recipients at its annual Awards Banquet June 4, 2011, in San Jose, CA.

Most Influential Paper of the Decade Award for Prof Ling Tok Wang
Prof Ling Tok Wang and his co-authors received the 10-year most influential paper award at DASFAA 2011, held in Hong Kong from 22 to 25 April. The title of the paper is "A Logical Foundation for Deductive Object-Oriented Databases".
**Research Projects**

**M3R (Multimodal Mobile Music Retrieval)**
With the continuing advances in data storage and communication technology, there has been an explosive growth of music information from different application domains. The M3R project aims at innovating techniques for organizing, browsing, and searching large music data collections. Being user-centric, M3R is especially interested in personalized multimodal music search to boost the efficiency and effectiveness of music retrieval. Moreover, M3R takes the challenge to push the boundary of traditional desktop-based music retrieval to mobile platforms, which have promising applicability and huge market potential. This project is headed by Dr. Wang Ye.

**MMQA (Web-Scale Media Search and Multimedia Question-Answering)**
With the exponential growth of media contents on the Web, the ability to search for media entities not just based on text annotations, but also visual contents, has become important. Although limited, commercial search engines, such as Bing and Google image search, are now offering separate search services based on text and visual contents, which have their own limitations and often produce unsatisfactory results. As we move toward the next phase of Web-scale media search, we need to tackle several critical issues in media research. This project is headed by Professor Chua Tat-Seng.

**PAT (Process Analysis Toolkit)**
**PAT Student Team won ICSE 2011 Score Formal Methods Award**
Our PAT Student Team won the Formal Methods Award at SCDE software engineering contest held at ICSE2011 in Honolulu, Hawaii. The system they developed is “Transport4You, an intelligent public transportation manager”. PAT model checker is used not only as a verification tool for the system design but also as a service that computes an optimal travel plan. 94 teams from 48 universities in 22 countries started the competition; 53 finished and made final submission; 18 teams were selected for the second round; 5 finalist teams were invited to Hawaii with 2000USD travel award and free conference registration for each team. Two winners (Formal Methods Award and Overall Award) were selected during the conference. The team members were Li Yi (HYP), Yang Hang (MComp) and Wu Huanan (MComp), all supervised by A/Prof Dong Jin Song.

PAT is a self-contained framework for composing, simulating and reasoning of concurrent, real-time systems and other possible domains. PAT implements various model checking techniques catering for different properties such as deadlock-freeness, divergence-freeness, reachability, LTL properties with fairness assumptions, refinement checking and probabilistic model checking. So far, PAT has 1300 registered users from 290 universities in 35 countries and regions. This project is headed by Dr. Dong Jin Song (NUS), Liu Yang (NUS) and Sun Jun (SUTD).

**Reliable Protein Interactomes for Infectious Diseases (2010 - )**
There is a critical need to address the emergence of drug resistant varieties of pathogens for several infectious diseases. For example, drug-resistant tuberculosis has continued to spread internationally and is now approaching critical proportions. In this project, we propose to deal with the challenges in the systems-level analysis of proteins and interactions in pathogens of infectious diseases for identifying drug resistance pathways. This project is headed by Professor Limsoon Wong.
Image Create and Share

...was Dr Bimlesh Wadhwa’s introductory message this afternoon as a score or so Junior College students peered across the lab.

Yup...we were Scratch-ing once again! This time, with collegians who were here for a workshop as part of the Science Focus programme. The workshop was meant to introduce concepts of programming and computation using the Scratch programming language by MIT.

In a similar workshop we had in May, we spread the learning concepts over four days. Our students today braved the same concepts in less than four hours. Mere minutes into the workshop we noticed interesting animations materialize using code blocks introduced just a while ago. We have to say we are impressed with their drive for experimentation, considering the little time they had to acquaint themselves with basic programming concepts.

We hope the students had as meaningful and fun a time at the workshop as we had conducting it.

A Student FYP Project: SoC Directory

The use of multitouch technology has become increasingly popular in the past several years, especially since the introduction of Apple iPhone. However, employing multitouch technology on large screen and 3D interaction with multitouch gestures are 2 areas yet to be fully explored mainly due to their high cost. This unavailability left most developers with smaller screens which are not suitable to explore multitouch gestures, especially those involving 4 or more touch points. In our work, we have designed and built a low-cost large-format multitouch screen system accompanied by an interactive 3D directory application allowing intuitive interaction with 3D floorplan models. Moreover, we have also integrated several components such as SMS service, RFID identification, live update, fail-safe mechanism, etc. to complete the system as a fully deployed kiosk. The final system will be deployed for user testing in School of Computing and will be further polished based on users’ feedbacks. This project is done by student Nguyen The Loan.

Student Project: Sand Canvas

Sand animation is a performance art technique in which an artist tells stories by creating animated images with sand. Inspired by this medium, we have developed a new multi-touch digital artistic medium named SandCanvas that simplifies the creation of sand animations. SandCanvas also goes beyond traditional sand animation with tools for mixing sand animation with video and replicating recorded free-form hand gestures.

SandCanvas enhances the physical sand animation by incorporating portability, preservation and other digital capabilities. It is also able to capture characteristics of real sand with unique techniques like pouring sand from a cup. Thanks to Rubaiat (a PhD candidate in the HCI lab) and Chris (a UROP student in the HCI lab), we can now draw freely in the comforts of the HCI lab without the need for a complicated setup of a physical sand animation table.

Blog of A Computer Science Student

Tuesday, May 10, 2011
Wumpus vs. Robots

I saw CS students who are taking the Artificial Intelligence class showing off their robots today. The students programmed the robots to navigate through a dangerous world filled with wumpus in order to pick up a stash of gold. The robots are armed with bow and arrow, and sensors to detect walls, pits, wumpus, and gold. the robot can hear the sound of the horrible death of a wumpus as the wumpus gets shot by the arrow. Cute! The students didn’t get to keep the gold though.
About School of Computing

Established in 1998, NUS School of Computing provides a stimulating environment that amalgamates the best of educational traditions, drawing its faculty staff of 200 from leading universities ranging from the Ivy League to Oxbridge. The School, which is a fully fledged faculty within the National University of Singapore, has about 2,000 students, a quarter of them pursuing graduate studies. Since its early days as the only university department in Singapore that produced computing talent for the workforce, NUS School of Computing has produced a trail of distinguished alumni, including the chief executives and technology architects of multinationals and government agencies.

The School encourages excellence in diversity among its students. Some are winners of prestigious awards such as the National Infocomm Scholarship. Others are creative thinkers capable of besting their peers in international competitions in areas such as Games Artificial Intelligence.

At the School, research initiatives are supported by a number of research laboratories and centres. Fitted with equipment that is funded mainly by research grants, the laboratories and centres provide a common space for people with similar interest to exchange ideas and work together.

The School is managed by an Executive Committee, with input from an Industry Advisory Committee.

In terms of affiliation, the School enjoys a close working relationship with its alumni, represented by the Computer and Information Science Alumni Association (CISAA). The student body is represented by the NUS Students’ Computing Club, whose precursor was the Computer Science Society.

Historically, NUS School of Computing traces its roots to the Department of Information Systems and Computer Science (DISCS) within the Faculty of Science, and further to the joint campus days.

Job Perspective

"The geeks strike back: despite enduring an industry bubble and the threat of outsourcing, Software Engineer ranks as the Best Job of 2011."

Software Engineering, a job that involves the design and creation of software for everything from operating systems to cell phone “apps” to interactive games, ranks as the best job of 2011, according to this year’s Jobs Rated report.

Useful Links:
- School of computing http://www.comp.nus.edu.sg
- Department of Computer Science http://www.comp.nus.edu.sg/cs

This Newsletter is designed and developed by
Zhang Xian, Dong Jin Song, Wei Tsang Ooi, Zhao Shendong and Zhou Yinsheng
School of Computing,
National University of Singapore
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