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COMMUNICATIONS FROM

CSE

School of Computing & Software Engineering

FALL
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Message from the Dean

WELCOME TO THE FALL 2006 EDITION OF *COMMUNICATIONS FROM CSE*, THE NEWSLETTER THAT BRINGS YOU INFORMATION AND NEWS FROM THE SCHOOL OF COMPUTING & SOFTWARE ENGINEERING (CSE) AT SOUTHERN POLYTECHNIC STATE UNIVERSITY (SOUTHERN POLY OR SPSU).

There will be a search for a new Dean of CSE this academic year since I will be stepping down and returning to the faculty at the end of June 2007.

Communications appears twice each academic year, fall and spring. It is available both in print form and in PDF form on our website (cse.spsu.edu). I welcome your comments (to mmurphy@spsu.edu) on *Communications* and how we can improve its effectiveness in providing information and news on CSE at SPSU.

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COMPUTER SCIENCE PROGRAM ACCREDITED BY ABET

ABET Accreditation is a peer-review process that requires programs to undergo comprehensive, periodic evaluations. The evaluations, conducted by teams of volunteer professionals working in industry, government, academe, and private practice within the ABET disciplines, focus on program curricula, faculty, facilities, institutional support, and other important areas, such as processes for program assessment and continuous improvement. In addition to providing colleges and universities a structured mechanism to assess, evaluate, and improve their programs, accreditation also helps students and their parents choose quality college programs. It also en-

ables employers and graduate schools to recruit graduates they know are well-prepared, and accreditation is used by registration, licensure, and certification boards to screen applicants.

ABET is a not-for-profit organization, owned and operated by its more than 25 professional and technical member societies. An internationally respected organization with some 1,500 volunteers, ABET has set the higher-educational standards in its fields for nearly 75 years. More information about ABET, its member societies, and the evaluation criteria used to accredit programs can be found at www.abet.org.

Geeks Get It Done Computer Competition

On September 30, 2006, we held a computer competition for high juniors and seniors. There were 2 consecutive parts to the competition, the first on "Getting Info Off a PC" and the second on "PC Configuration and Troubleshooting". Although there was a small turnout, it was very well received by the students, who had a great time. Awards were given to top performers. The workshop was funded by the Office of Academic Affairs at SPSU with support from SPSU's Extended University and was organized by Mr. Ray Walker, CSE Labs Supervisor and Dr. Abdullah Faruque (CS) with assistance from Mr. Micah Rowland (Tech Support for CSE Labs), Dr. Svetlana Peltsverger (IT), Mr. Fred Gutierrez (MSIT student), and CSE Dean Mike Murphy.



COMPUTER SCIENCE INDUSTRY ADVISORY BOARD EVALUATES CAPSTONE PROJECTS

Since May 2004, the Computer Science Industry Advisory Board (IAB) has met twice a year to review and evaluate the CS Senior Capstone Projects. Near the end of every fall and spring semester, a half day meeting is scheduled for the IAB. Before the meeting, IAB members are assigned to CS senior capstone projects. The IAB members are given access to each project's documentation and information to review before the meeting. Each meeting begins by updating the IAB members of any new and significant developments within the CS department and SPSU in general. The IAB members then split into groups to hear student presentations and see demonstrations of the projects. The IAB members ask the students questions about their projects—the development process, what problems occurred, how the problems were solved, etc. IAB members then evaluate the projects (see related article below “Evaluation System for CS Capstone Projects Becomes a Capstone Project”).

The IAB members are then invited to a “browsing” session where they can see all the CS senior capstone projects developed for the semester. The browsing session is an interactive environment where IAB members and CS faculty can look at project documentation, see project demonstrations, and talk directly with the students involved in each project. This is a chance for IAB members to delve in depth with a specific project and to be able to compare the quality and depth of all the projects.

At the end of the browsing session the IAB members meet first with faculty to share their comments and insights on the projects, both positive and negative. The students are then invited to join in the discussion. General feedback is given to the students on the overall quality of the projects, any general trends the IAB noticed within the projects, and the overall impression of the projects. Students are asked to comment on the overall capstone

process and the evaluations of their projects. Students may also give comments on the entire degree program.

Having the IAB members serve as external validators of the CS senior capstone projects has been an excellent source of information for continuous improvement of the degree program. The CS department has received invaluable feedback from IAB members that has improved our curriculum and the entire IAB / capstone evaluation process. Our IAB input is a very important part of the assessment process the CS program uses in its quest for continuous improvement, and has been instrumental in ABET accreditation for the BSCS program effective October 2004. The members of the IAB and their affiliations were listed in the Spring 2006 CSE newsletter and may also be found at <http://cs.spsu.edu/IABBios.htm>.



EVALUATION SYSTEM FOR CAPSTONE PROJECTS BECOMES A CAPSTONE PROJECT

In the past year, the CS Industry Advisory Board (IAB) members became both customers as well as evaluators of a CS senior capstone project. When the IAB members initially began evaluating the CS senior capstone projects, the evaluations were done on paper and manually entered into spreadsheets along with comments for analysis. One of the IAB members suggested that they be able to enter their comments and evaluations online, and a senior capstone project was born!

The next term, a capstone project team was assigned to implement the online evaluation system. Briana Morrison, the CS Undergraduate

Coordinator and Assessment Coordinator, was assigned as the customer who gave the requirements of the project to the team. The team did an initial implementation of a system and the Fall IAB meeting served as the testing ground for the project. The project worked well, but after using the system, both the faculty and the IAB members had suggestions on improving the project.

Several additional features were added to the requirements and the project was assigned to another team the next semester. This second team worked hard to incorporate usability testing and all the additional features into the system which was

once again tested during the IAB meeting. The second time the project passed with flying colors. Now during the capstone presentations, IAB members can record the evaluations and comments directly into the system. They can then go back and edit the comments before submission. The system allows the user to print the comments. Best of all, all the data is presented in a single report so students can actually find out their evaluations the same day as their presentations and the results can be viewed during the feedback sessions.

Now that's really putting our students' efforts and expertise to good use!



COLLABORATION WITH CHINESE UNIVERSITIES

The Computer Science undergraduate program has collaborative agreements with Northeast Normal University (NENU) in Changchun, China and with North China University of Technology (NCUT) in Beijing, China. Some students from these universities are already here, and dozens more are expected starting in 2007 on an ongoing basis. In addition, the Department of Computer Science and Software Engineering is hosting two visiting professors (Professor Tieli Sun and Dr. Shuhua Liu) from NENU during Fall 2006.



Honor for CS Professor

Dr. Chih-Cheng Hung, Professor of Computer Science and Director of the Digital Image Processing Lab at SPSU, has been designated with the honor of Guest Professor for the Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (LIESMARS) at Wuhan University in China. This designation is for 2006-2010 and was made in recognition of Dr. Hung's outstanding contributions to geo-spatial information science. LIESMARS is one of the most highly ranked labs in China, and Wuhan University is one of the leading universities.



CSE ACADEMIC ADVISOR'S OFFICE HAS MOVED

MS. BETH HAYNIE, CSE ACADEMIC ADVISOR, WHO SERVES AS FULL-TIME ADVISOR FOR CS, IT, AND SWE STUDENTS, IS NOW LOCATED IN J354B, WHICH IS INSIDE THE J355 OFFICE SUITE.

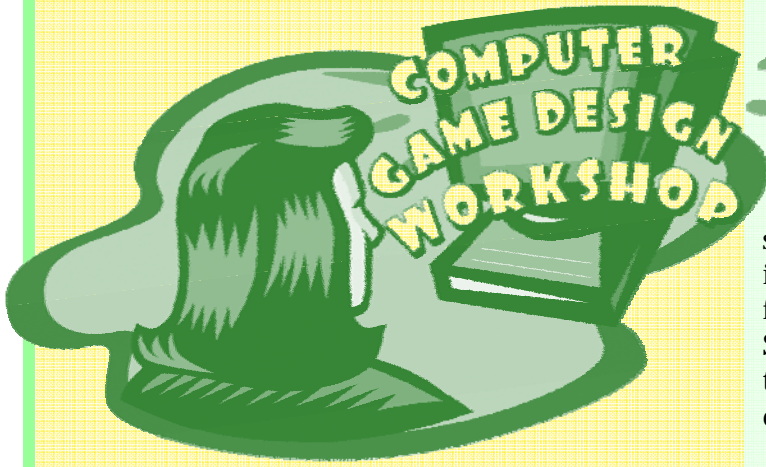
Merger of CS and SWE Departments

After careful consideration, the Computer Science Department and the Software Engineering Department were merged effective July 1, 2006, to form the Computer Science & Software Engineering Department. The CS faculty will have primary responsibility for CS curricula, degree programs, and accreditation, and the SWE faculty will have primary responsibility for SWE curricula, degree programs, and accreditation. Otherwise, the new CSWE Department will function as a single unit. The Chair of CSWE is Dr. Venu Dasigi, who was formerly Chair of CS. Professor Briana Morrison is the Undergraduate CS Coordinator; Dr. Juan Guzman is the Graduate

CS Coordinator; Professor Barbara Bernal Thomas is the Undergraduate SWE Coordinator; and Dr. Sheryl Duggins is the Graduate SWE Coordinator. The IT Department is unchanged by the merger.

The Computer Science & Software Engineering Department serves its students through the Student Services Office in J355, staffed by Ms. Vanessa Bard, Administrative Assistant II. The CSWE Department Office is in J370, where you will find Ms. Fariah Ahmed, Administrative Assistant II. Dr. Dasigi is now in J 371B, which is inside the J 370 Office suite.

Computer Game Design Workshop for Young Women



June 5-7, 2006, twenty-one young women who were rising juniors and seniors in high school participated in a residential workshop on computer game design at SPSU. The young women discovered ways to use game design solutions to attract attention, inform, entertain, and educate, as well as how to apply a variety of technologies to make it all happen. They stayed in the dorms and learned much about Southern Poly during their stay. The workshop was funded by the Office of Academic Affairs at SPSU with support from SPSU's Extended University and was organized by Professor Barbara Bernal Thomas. Other CSE faculty who assisted were Bob Brown, Briana Morrison, Susan VandeVen, and Becky Rutherford. Staying with the students after hours was Katie DeVore, a graduate of our BSIT program.

SUMMER WORKSHOP FOR TEACHERS

June 13-15, 2006, fifteen high school teachers of mathematics, science, and computing attended a workshop at SPSU. The workshop had classroom presentations/demonstrations in the morning and lab sessions in the afternoon. The mornings included mathematics (the computer algebra system, MAPLE, as a modern visual aid for mathematics), science (human cardiopulmonary physiology), computing (visual software development in an integrated environment), presentation technology (techniques for effective instruction), the history of engineering and technology, and an orientation to the variety of programs offered by SPSU. The afternoons included laboratory sessions on mathematics (Maple) science (cardiopulmonary physiology), and computing (visual software development). The purpose of the workshop was to broaden and deepen appreciation for new content directions in mathematics, science, and computing, as well as building bridges to the high schools. The workshop was funded by the Office of Academic Affairs at SPSU with support from SPSU's Extended Uni-



versity and was organized by CSE Dean Mike Murphy. The primary program was delivered by Dr. John Ziegler (Mathematics), Dr. Mark Sugalski (Biology), Ms. Susan VandeVen (IT), David Stone (Instructional Technology), and Dr. Zvi Szafran (VPAA). Professor Briana Morrison of CS gave an overview of the CSE programs.

FACULTY ACTIVITIES

Dr. Venu Dasigi, Professor and Chair of CSWE, had the following activities:

- Offered a 5-day workshop in India on "Search and Mining Engines and their Applications", sponsored by Tata Consultancy Services at Gandhi Institute of Technology and Management (GITAM) in India, June 9-13, 2006. The workshop, which also included a laboratory component, was attended by about 60 students, faculty members, and industry practitioners. GITAM is an institution with which SPSU has a memorandum of understanding for student, faculty, and research exchange.
- Have served as an ABET Computing Accreditation Commission (CAC) program evaluator for over five years, and have recently been appointed an Alternate Member of the Commission with training in July to be ready to serve as a Team Chair for ABET-CAC.
- Chaired a session "How People Learn" at the International Conference on Engineering Education (ICEE-2006), July 25, 2006, San Juan, PR; authored "Practical Program Outcomes Assessment A Case Study", Proceedings of ICEE-2006, pp. T4A1-T4A5, which describes the assessment process implemented in seeking ABET accreditation for the B.S. programs in Computer Science and Software Engineering at SPSU.



Dr. Chih-Cheng Hung, Professor of CS, had the following activities:

- Co-author on a conference paper: Hung, C. C., M. Pham, S. Arasteh, B.-C. Kuo and T. Coleman, "Image Texture Classification Using Texture Spectrum and Local Binary Pattern," Proceedings of the 2006 IEEE International Geoscience & Remote Sensing Symposium (IGARSS), Denver, Colorado, August 2006.
- Co-author on a conference paper: Kuo, B.-C., M.-H. Chi, C.-C. Hung and T.-Y. Hsieh, "A Comparison of Hierarchical Classification Processes Based on Hyperspectral Image," Proceedings of IGARSS 2006.
- Co-author on a conference paper: Kuo, B.-C., M.-H. C.-W. Chang, C.-C. Hung and H.-P. Wang, "A Modified Nonparametric Weight Feature Extraction Using Spatial and Spectral Information," Proceedings of IGARSS 2006.
- Co-author on a conference paper: Arasteh, S., C. C. Hung and T. Coleman, "A Comparison on Image Quality

Measures for Auroral Images", The 5th International Conference on Information and Management Sciences, July 2006, Chengdu, China, pp. 262-265.

- Co-author on a conference paper: Jim, R., L. Zhang, B. Meng, E. Song, X. Xu, and C. C. Hung, "A Weighted Average Algorithm for Edge-preserving smoothing on MRI images", Proceedings of the SPIE, Vol. 6144, February 2006, San Diego, CA, pp. 61446H-1 to 8.
- Visiting scholars who worked under the direction of Dr. Hung, Dr. Jian Zhou (China) and Duen-Kai Chen (Taiwan), completed their visits to SPSU and returned to their home institutions in August 2006.
- Gave invited lectures on Digital Image Processing and Analysis to graduate students in the State Key Laboratory of Information Engineering in Surveying, Mapping and Remote Sensing (LIESMARS) at Wuhan University and at the Center for Medical Imaging Research at Huachong University of Science and Technology in Wuhan, China, June 2006. Both are major research institutions in China with large numbers of graduate students.
- Attended the inauguration of Robert Jennings as President of AAMU as a delegate from SPSU, September 2006, Huntsville, Alabama.
- Serving as President for The Association of Chinese Schools in Southeastern US for one year from 2006 to 2007.
- Served as program committee member for the 11th International Conference on Fuzzy Theory and Technology (FTT 2006), Kaohsiung City, Taiwan, October 8-11, 2006.
- Served as program committee member for the IASTED International Conference on Intelligent Systems and Control (ISC 2006), Honolulu, USA, August 14-16, 2006.
- Served as program committee member for the 4th ACIS International Conference on Software Engineering Research, Management and Applications (SERA 2006), Seattle, Washington, August 9-11, 2006.
- Served as program committee member for the 4th International Conference on Information (Information 2004), University College Cork, Cork, Ireland, August 1-5, 2006.
- Served as program committee member for the Fifth International Conference on Information and Management Sciences, Chengdo, China, July 1-5, 2006.
- Served as program committee member for the IASTED



FACULTY ACTIVITIES

International Conference on Applied Simulation and Modelling (ASM 2006), Rhodes, Greece, June 26-28, 2006.

- Served as program committee member for the 6th International Conference on Software Engineering, Artificial Intelligence, Networking & Parallel/Distributed Computing (SNPD'06), Las Vegas, Nevada, June 19-20, 2006.
- Served as program committee member for the first SPSU Kick Start Research Symposium, Marietta, Georgia, June 16, 2006.
- Served as track chair for the 22nd Association for Computing Machinery (ACM) Symposium on Applied Computing (SAC) – Artificial Intelligence, Computational Logic, and Image Analysis Track, Seoul, Korea, March 11-15, 2007.
- Served as reviewer for IEEE Transactions on Systems, Man and Cybernetics – Part B from August to October, 2006.

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Dr. Mike Murphy, Dean of CSE, had the following activities:

- Authored formal reviews of 3 papers for ACM's Computing Reviews, with all 3 published online in the period July – September 2006.
- Served as Team Chair for 2 Technology Accreditation Commission visits in role as TAC Commissioner for ABET.
- Reviewed 3 papers being considered for the Technical Symposium of SIGCSE.

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Dr. Kai Qian, Professor of CS, had the following activities:

- Co-author (with Richard Allen, Mia Gan, and Robert Brown) on textbook, "Java Web Development Illuminated", Jones and Bartlett, 2007 copyright (published Summer 2006).
- Co-author on textbook, "Software Architecture Design: Methodology and Architectural Styles", Stipes, August 2008.
- Co-author on a conference paper: "Asynchronous Call-

back in Web Services", Proceedings of IEEE/ACIS SNPD 2006, pp. 44-47, June 2006.

- Co-author on a conference paper: "An Incremental, Spiral, Topic-Driven Approach", Proceedings of FECS06, pp. 66-71, June 2006.
- Co-author on a conference paper: "Decoupling Metrics for Service Composition", Proceedings of IEEE/ACIS ICIS-COMSAR 06, pp. 375-380, July 2006.
- Co-author on a conference paper: "Open Source Software for Teaching Component-based Software Development", Proceedings of ESTA, July 2006.
- Co-author on a conference paper: "Decoupling Metrics for OO, Component, and Service Oriented", Proceeding of WorldComp 2006, pp. 226-232.

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Dr. Becky Rutherford, Professor of IT, had the following activities:

- Presented paper "What Do We As Educators Really Know About Copyright, the Law, Technologies and the Web?", 4th International Conference on Education and Information Systems, Technologies and Applications (EISTA 2006), Orlando, July 2006.
- Presented paper "Using Personality Inventories to Form Teams for Class Projects - A Case Study", SIGITE Conference, Minneapolis, October 2006.
- Serving as Secretary for SIGITE, 2006-2007.
- Serving as SACS Liaison for SPSU.
- SACS self-study business partner for E.T. Booth Middle School in Woodstock and School Council member.

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Dr. Frank Tsui, Associate Professor of SWE, had the following activities:

- Co-author (with Dr. Orlando Karam, Assistant Professor of CS) on textbook, "Essentials of Software Engineering", Jones and Bartlett, 2007 copyright (published Summer 2006).
- Co-author (with Dr. Karam) on conference paper, "Analyzing Communications Activities in Student Software Projects", Proceedings of the 113th Annual ASEE Conference, Chicago, June 2006.

• **CSE Labs Update** •

ANSWERS TO YOUR QUESTIONS
FROM BRIANA MORRISON, CS UNDERGRADUATE COORDINATOR

RECENT HARDWARE ADDITIONS

New Smartboards and LCD projectors have been installed in J151, J251 and J159

New equipment has been acquired for Wireless Networking Courses (5 laptop computers, 7 routers, 3 access points, 1 gateway)

A Mobile Classroom consisting of 15 laptop computers on a mobile cart has been funded by Student Technology Fees. The units will support lab activities in conventional CSE classrooms and using the J building wireless network.

Virtual Private Network (VPN) is coming! The SPSU information technology division has completed installation of VPN equipment. When fully implemented, CSE students will be able to access lab servers from off campus. Rearrangements to CSE facilities are under way and implementation will begin during Fall06. Completion is expected in early 2007.

Why do I have to submit my petition to graduate at the beginning of the semester before I graduate? Why so early?



While your transcript shows what courses you have completed, in order to submit your petition to graduate, you must also list what courses you are currently taking and what courses you plan to take the next (last!) semester. Once we have this information we can do several things: 1) make sure you have completed all the courses required for your degree; 2) make sure you have taken enough hours; 3) help to plan the courses we offer the following term to make sure we offer what it is you need to take. Because schedules for the next term are designed early in the previous semester, we need all the data we can gather early to make sure we are helping you to complete your degree on time. The earlier you submit your graduation petition, the more we are able to help you reach your goal!

