The 2009 Acxiom Conference on Applied Research took place at UCA on February 13, 2009. The Department Computer Science sponsored the conference. Hu co-chaired the conference. The Department of Computer Science hosted the 2009 PyArkansas Conference on November 14, 2009. Python is a popular high level computer programming language. This regional conference is an annual gathering of Python Enthusiasts in Arkansas. Approximately eighty participants are IT professionals and college students mostly from Arkansas. There were eight lecture sessions including Python 101 to advanced topics. Lecturers are from Kansas, New York, and Texas. Professors Bernard Chen and Chenyi Hu of the Computer Science Department delivered the sessions Python 101 for Beginners and Image Processing with Python.

On behalf of faculty and staff of this department, I wish you have a wonderful holiday season.

Happy Holidays,
Chenyi Hu, Professor & Chair

Student Research

Steven Nelson, PI National Science Foundation Experimental Program to Stimulate Competitive Research (NSF EPSCoR) Fellowship Grant. "Joint Source-Channel Rate Control for Wireless Videos" Research, Faculty Mentor: Y. Sun

Christopher Rhodes, PI "Autonomous Drowning Detection and Rescue." Funding Amount: $2650 Faculty Mentor: P. Young


Xin Yin, Ling Tian, & Josh Stancil, “A new Rate Complexity Model for H.264/AVC Video Rate Control “, Faculty Mentor: Y. Sun

Marcus Swope, “3D Virtual Reality Display Using the Nintendo Wii Remote” Faculty Mentor: Y. Sun

We would especially like to thank our Sponsors for all their support: NSF Sun AR SURF Acxiom Conway Dev. Corp.
News and Activities

We are actively recruiting another tenure track faculty member to start at the Fall 2010 semester.

Dr. Sun received a $3000 grant from NASA EPSCoR for her research.

Dr. Kockara and graduate asst. Vincent Yip received $20,000 external funding from UAMS for research.

Department received $500 scholarship from Arkansas Academy of Computing designated to CS 0 class. This is to encourage students to major in CS.

Two CS Sophomores: Aaron Crawford and Cody Hudson constructed a simple computer in the Computer Architecture Lab Project. It is a four-bit CPU with five total instructions, three of which acted upon the CPU's two memory registers and two of which were essential for the CPU's interrupt processing. Using these instructions, students were able to reproduce the basic functions of a modern CPU and gain an understanding of the fundamental architecture thereof.

Dr. Raj Jain, http://www.cse.wustl.edu/~jain/, Professor of Computer Science and Engineering at Washington University in St. Louis visited the Department of Computer Science at UCA on November 12. During his visit, he met the CS Student Club of the department. He also delivered a seminar on his research work titled "Internet 3.0: the Next Generation of Internet". Dr. Jain was one of the Co-founders of Nayna Networks, Inc - a next generation telecommunications systems company in San Jose, CA. Previously, he was a Senior Consulting Engineer at Digital Equipment Corporation in Littleton, Mass and then a professor of Computer and Information Sciences at Ohio State University in Columbus, Ohio. Dr. Jain is a Fellow of IEEE, a Fellow of ACM and ranks among the top 50 in Citeseer's list of Most Cited Authors in Computer Science.

CS Team competed at the ACM Programming Contest Spring 2009, members were Thomas Winters and Bryan Gerlach, they placed 2nd.

In October, two teams competed at Arkansas Tech. sponsored by IBM. Members were: J.Barnes, A. Loney, M.Truscello, & W.Werner. Out of 135 teams from 5 states they placed 45th and 60th. Faculty advisor is V.Paruchuri and coached by Thomas Winters, CS Graduate Asst.

The CS Club has been busy this year with several activities, one of which was the “Ultimate Challenge”. The challenge consisted of Tech Jeopardy, where teams were quizzed on their computer knowledge. Then the Teacher Vs. Student Deathmatch, where 20 students competed against 7 professors. Winner being A. Loney, a CS club member and major. Final event was a programming competition to meet all levels of CS majors. The challenge will be a yearly event sponsored by the CS Club and CS Department. Faculty advisors: Drs. B. Chen and V. Paruchuri

Dr. Sheng: Ph.D in Computer Science from University of Western Ontario, Canada, joins the department as a visiting assistant professor, Fall ’09. His research includes, Data Mining, S.E., A.I., and Data Security. He is currently teaching Algorithms and CS 1300 for the department.

CS Club hosts lots of fun activities throughout the year.

Dr. Victor (Shengli) Sheng
## Journal Publications:


## Graduate Program in Applied Computing

Currently, we have 15 students enrolled in our Master of Science in Applied Computing graduate degree program. Recent graduates are continuing their studies with us and also work as graduate assistants. This year, we were able to provide 5 graduate assistantships. Graduate students have worked hard on their research. Some of them have presented their projects at various conferences. Three graduate students presented their master projects.


**Guanchen Chen**, “Volatile Data Predictive Analysis with RILS”, CNSM Symposium 2009, Advisor: Dr. C. Hu

**Vincent Yip** received $20,000 Scholarship from UAMS to support his UCA thesis research co-directed by Dr. S. Kockara of UCA and Dr. U. Topaloglu of UAMS. Research involves biomedical image processing and discovering concepts from pathology reports.

We welcome applications for graduate study. Graduate assistantships are available. If interested see information about this program at [http://www.cs.uca.edu](http://www.cs.uca.edu) or contact Dr. Chenyi Hu.

## Grant Awards


**P. Young**, PI Steven Nelson. National Science Foundation Experimental Program to Stimulate Competitive Research (NSF EPSCoR) Fellowship Grant. “Autonomous Drowning Detection and Rescue.” Funding Amount: $2650
Mark Smith earned his Ph.D. Degree in Electrical Engineering from SMU on May 17, 2008. His dissertation, “Unsupervised Object-Based Video Segmentation using Color, Texture and Motion” pertains to the research and implementation of various video processing algorithms as well as video database retrieval systems. His expertise involves pattern recognition, intelligent systems, and statistical modeling of videos, images, and signals. Mark Smith has produced numerous publications resulting from this work in the exciting new area of video data mining as well as in the fields of knowledge processing, knowledge engineering and scene analysis. He has also led several UCA Computer Science graduate students who implemented projects directly related to his research. SMU, located in Dallas, Texas is recognized as a leader in engineering education. The Computer Science Department and Electrical Engineering department at SMU were originally combined within a single department (with all courses co-listed).

**Faculty News**

**C. Hu**, ABET Computing Accreditation Commission, program evaluator for computer science and information systems.

Arkansas Cyberinfrastructure Task Force, member of the legislative committee appointed by the House Speaker of Arkansas: Robbie Wills.

**S. Kockara**, Program Comm. Member the First International Workshop on merging Mobile Networks (EMN’s 2009)


Accepted an invitation, Hu visited the Academy of Mathematics and Systems Sciences, Chinese Academy of Sciences, Beijing, China from May 22-30, 2009.

**V. Paruchuri**, Committee Member, ALAR Conference on Applied Research in Information Technology, 2009.


**Invited Presentations**


Tech News: Over the past year we have begun the transition to using Linux as our primary operating system. As part of the transition, we did away with Windows dual-booting. Instead we run the Windows operating system as a virtual machine under Linux. By using virtualization, on top of Linux’s stability, we have dramatically increased each machine’s uptime. Furthermore, we can now propagate changes to all of the department’s laboratories much more quickly than before.

Also this year we have implemented department-level portable home directories using AFS. This allows students to customize their Linux environment to suit their preferences and work-flow without adversely affecting other students. They can then move from machine to machine, and always be able to access their modified environment.

As part of the University’s revamping of their web presence, all the departments on campus have been asked to port their old web content to a new system. This new system condenses the disparate designs used by the various departments into a more cohesive design. This fall the Computer Science department’s website was ported this new system. You can now find our new site at http://www.uca.edu/computerscience.
Attention Alumni

We would very much like to keep in contact with our departmental alumni. We have created a database for our alumni information. Please send your name, employment status and current address to Diana at dianaw@uca.edu.

We aim to establish a community that can share resources and contact information.

Thank you.