Mahzabeen Islam, Marko Scrbak, and Charles Shelor, PhD students from Dr. Krishna Kavi’s Computer Systems Research Laboratory (CSRL) in the CSE department, attended the Ninth International Summer School on Advanced Computer Architecture and Compilation for High-Performance and Embedded Systems (ACACES) in Fiuggi, Italy this summer. The ACACES summer school attracts students and professors from all over Europe and the United States. Universities and institutions represented included MIT, Purdue, Carnegie Mellon, Barcelona Supercomputing Center, Inria, Georgia Institute of Technology, Oxford, Cambridge, and many others. There were a total of 12 courses offered and students selected the course of their choice from each of the 4 time slots. The courses included architectural modeling issues, parallel programming, reconfigurable computing, memory system advances, many core systems, and other topics. The course instructors were available for discussions during the breaks between classes and at each of the meals. The summer school also included a poster session where 85 student research efforts were displayed. This allowed students and instructors to find others with similar research interests and share information. ACACES kicked off with a keynote session and welcome dinner on Sunday evening and concluded with a celebratory party on Friday evening. Details on the summer school can be found at: http://www.hipeac.net/summerschool/index.php?page=home

Dr Kavi joined the students after the ACACES school for meetings with some of his former students and current colleagues to share research interests and plans to assess potential joint research activities. Meetings were held at Siena University in Italy and at Technical University of Dresden in Germany. A reunion with the Italian students that performed memory architecture research with the CSRL last spring took us to Pisa, Italy.

**Mahzabeen:** I attended four different courses at ACACES. The first course was “Dangers of and Alternative to Simplified Architectural Models in Multicore Research” conducted by Dr. Arvind from MIT. Dr. Arvind’s lectures will inspire any computer architecture researcher who is involved in multicore processor simulation to take a deeper
and detailed look at the microarchitectural feature details of the simulator the researcher is using. The second course was “Scalable Many-core Memory Systems” taught by Dr. Onur Mutlu from Carnegie Mellon University. Dr. Mutlu focused on how to design main memory systems more efficiently to get better performance for many-core systems. This course was the most interesting one for me since it relates closely to our research area and we also got an opportunity to discuss our research with Dr. Mutlu one evening. The third course was “Memory Hierarchies and their Impact on Virtualization” given by Dr. Alex Garthwaite from CloudPhysics. The fourth course was “2.5D and 3D IC electronic systems” conducted by Dr. Hsien-Hsin Lee from Georgia Institute of Technology. His lectures were also very helpful since we are also looking into different 3D DRAM organizations.

Marko and I presented “A Methodological Study on Shared Cache Optimizations” during the ACACES poster session. It was a great experience presenting our work to faculty members and students from different parts of the world. We also went to presentations of other students' research. It was a great opportunity to exchange ideas with people working in different areas of computer architecture.

I really feel privileged to have participated in such an international summer school where one can learn about the most recent research directions directly from some of the most renowned researchers of current time, meet new people from all over the world and make connections and friends. The hospitality of the organizers of the summer school was second to none, everything—starting from airport shuttles to accommodation, food, classroom facilities were excellent.
**Marko:** This summer has been quite an experience for me. ACACES brought me not only insights in the most recent research topics in Computer Science, but also valuable connections with people around the globe. A large amount of interesting material, which was covered during daily courses, was discussed further during fine dinners and frequent coffee breaks. Even this wasn’t enough for me as well as others, so we arranged private sessions with the distinguished instructors. How many times do you have an opportunity to talk with a professor from MIT, a developer from Altera, a researcher from Inria, or students from Cambridge and Oxford? Luckily, everyone was in the mood to share their experience and knowledge with others.

However, the European experience didn’t stop in Fiuggi. We continued our tour in Siena and Pisa, where we exchanged experience and extended our collaboration with research groups from University of Siena and University of Pisa, both very active in Computer Architecture research. To conclude our knowledge exchange trip, we visited our connections in Dresden, Germany, at TU Dresden. After a productive meeting with two different research groups, we had the opportunity to join our advisor Dr. Kavi presenting to a class at their own summer school, and share our ideas with younger students.

This small European tour has been a great success, and a wonderful experience to me. It would be great if everyone could experience something similar. The ideas and knowledge you can share with others, and the cultures and people you encounter, are truly amazing. Even the hot European sun, which was almost as bad as in Texas, could not lower my overall impressions from this trip. I am grateful I was able to be part of it, and I am looking forward to similar future experiences.

![Photo of researchers with Dr. Krishna Kavi and Dr. Roberto Giorgi](unt_siena_researches_with_dr_krishna_kavi_and_dr_roberto_giorgi)

**Charles:** This trip was an absolutely fantastic experience! The ACACES courses that I attended were very good and the instructors were animated and excited in their presentations. Fiuggi is a very picturesque resort village and an excellent environment for the summer school with great accommodations and superb food. However, the best
part of the trip was meeting and getting to know so many people with diverse computer
architecture research interests and experiences. The discussions during meal times and
evenings were truly interesting and as varied as the students and the universities and
institutions they represented. If you are a graduate student in computer architecture or
compilers you should try to get to an ACACES summer school during your studies.