A few weeks ago I had the opportunity to volunteer at and attend the 43rd ACM Technical Symposium on Computer Science Education. The focus of the symposium was on technologies, collaboration, and research aimed at the advancement of Computer Science (CS) education. Papers presented included CS education at the college, high school, and middle school levels. However, the main focus was on college education.

The symposium had many different tracks, too many for any one person to attend all of them. There were entire sessions dedicated to topics such as Alice and Scratch, mobile development, teaching methods, ethics, scrum, social networks, and games. Given the large number of available choices and my current inability to be at multiple places simultaneously I decided to prioritize. Also, given my research interest, it should not be surprising that anything having to do with games was immediately moved to the front of the queue, Alice and Scratch were a close second, and everything related to CS teaching methods and studies followed.

I was pleasantly surprised to see that games had such a prominent place at the symposium. It was not only that there was a dedicated track but also that games were mentioned several times during other talks. Why games? What exactly do they have to do with teaching computer science? The answer, in my opinion, is somewhat complex and can be heavily influenced by people’s perceptions and opinions on the role of games in CS. From the papers that where presented I gathered that games are increasingly becoming a tool to convince young people to pursue a career in the sciences. So it is not just computer science, although that was the focus of many of the papers, i.e., using games to introduce middle and high school students to computer programming. Games are being used to teach English composition, Math, Biology, Physics, and Chemistry. In essence the idea is that science and other subjects can be made more interesting and approachable by presenting their concepts in a context that is fun and entertaining. Of course, there was also the somewhat more traditional use of games in introductory programming courses in the hope that they will be fascinating enough to help create new computer scientists. At the core of this idea is one of the issues that as a nation we are dealing with: how can we produce more scientists and engineers to be able to compete in the global economy?

In addition to efforts targeted at encouraging young people to start a career in Computer Science there was also a lot of talk about methods to help them succeed and retain them once they decide to join the field. It appears that in many cases after just a few semesters CS majors fail out or become disinterested and switch to other majors. The problem is serious enough that several institutions have research programs in place aimed at developing methods to help CS majors succeed. Among the efforts that I found more interesting where the following:
- Using short discussions in class where computational problems are brought into perspective by relating them to real world applications or important world events.

- Offering multiple tracks during early stages of CS education, e.g. mobile, robotics, music, games.

- Helping students create a support network by socializing, e.g. mentoring, student organization involvement, group projects.

- Pair programming.

Another ongoing point of discussion during the symposium was the lack of women participation in CS. It appeared that this problem has two main aspects: first is the issue of attracting women to the field and second is the problem of retaining them once they become participants. I heard several discussions on this topic, many of them heavily influenced by political overtones and finger pointing. In my opinion, without discussing culprits or conspiracy theories it is no secret that this is a real issue; all we have to do is look at the enrollment figures in undergraduate CS programs and try to correlate them to the population percentages in this country. In short there should be a lot more women in CS if the field is to reflect actual population percentages. I was glad to see that there are programs that are working on developing strategies to address this in a manner that is objective.

Overall I found the symposium extremely interesting and inspirational. It was comforting to meet an entire community dedicated to the betterment of CS education. It was inspirational to be in a forum where novel ideas about teaching CS are presented and discussed. There were many other topics I found interesting, too many to discuss in one blog entry. I strongly suggest browsing through the papers, in particular if you are interested in becoming a CS professor.