



Microsoft Imagine Cup 2007 - Software Design Invitational

Project AVRiL – Pakistan 

Lahore University of Management Sciences

Quality education is a gift only a few receive in this world. Out of the thousands of schools and universities students go to, only a select few offer high-quality education, from which most are located in the first-world. Hence nearly all students will never awake to the true learning experienced in these numbered academic institutes. This stands as a living fact especially for college and graduate students. AVRiL aims to change education for those less fortunate, while facilitating the ones already receiving high standards of education.

Technologies like the Internet have created a platform that enables information sharing, and there have been numerous attempts by schools and universities at leveraging this technology to share quality education with those who do not have access to it. However, most of these attempts have failed, and we believe that the reason for their failure was the lack of the “classroom look-and-feel” that a student viewer needs, to continuously stay interested in a lecture and eventually a course. We feel that the next best thing to being in class is to give the student this *feel* by providing him/her with almost all the elements of an actual class. The most important element here is an interesting video of the lecture, covering the lecturer, the audience, the presentation slides used and the blackboards.

The traditional approach to lecture recording has been the hiring of a crew, which included a bunch of cameramen and a director. This team would come and record the lecture with instructions from the director. The cost of recording one lecture this way is at least \$330, even in a developing country like Pakistan. For a university offering 200 courses, recording course lectures once would cost \$1.3 million. This is why we feel that today, the real gap in spreading education using technology is not in content distribution, but rather in the quality content creation. AVRiL aims to completely automate the lecture-recording process, eliminating all humans starting from the cameramen to the director, thereby reducing cost and yet producing unobtrusive, high-quality video. This will make educational content-creation accessible and affordable, making it feasible for universities and colleges to record day-to-day lectures and publish them on the Internet.

AVRiL achieves this goal by using hi-tech Computer Vision techniques to track the lecturer and students, modeling of cinematography rules to code in order to make an interesting and captivating video, using sound source localization techniques to track student participation in the class, and providing an intuitive, bandwidth-sensitive web interface for students to be able to experience the classroom environment as closely as possible.