

# Vision for the Department of Computer Science

Students should have strong hands-on experience so they can handle challenging programming tasks. But more & more people agree that a programmer's job is a manufacturing job which can be easily out-sourced. Why? because a programmer's job basically is to produce something that can perform certain functions, this is exactly what an assembly line worker is doing. For most software users, as long as the software can perform required functions, they don't care much about where the software is developed. The key is the cost of the software. It is expected in the future more and more programming jobs will be out-sourced to countries where high quality software can be produced at a cheaper cost.

So, giving our students a traditional CS training is no longer enough. Everybody can do that. We need to give them something that can not be out-sourced, or, at least cannot be easily out-sourced. So what should we give them?

We need to get the students prepared for tomorrow's job market. We should emphasize on design capability. The students must know how to solve multi-disciplinary problems. They need to have digital information management skills and can handle information and internet security issues. They need to know how to use computation techniques to handle simulation and visualization tasks.

On the other hand, the world we are facing now is more interdisciplinary and collaborative. Computer Science today can not excel by itself. Computer science must join force with other disciplines to form teams to solve today's problems. An important issue here is the communication and transition of ideas and results between different disciplines. Performance of these tasks must be based on a medium people can easily understand. Visualization techniques obviously are the easiest and most efficient way to communicate ideas and results between different disciplines.

Another important issue is the information management/services problem. It is clear that internet will be the main platform of information transmission/access and collaboration for many year to come. So the study of internet based information management/services techniques is and will always be an important research area, so is the study of internet security.

I believe tomorrow belongs to those who know how to use efficient communication techniques and internet technology to integrate different computation models to solve multi-disciplinary problems in urgent areas such as security control, financial crisis monitoring, and public health.

## Vision for CS

- The Computer Science Department will be a leader in **laboratory-based** computer science instruction grounded in tomorrow's job market, and will be recognized, nationally and internationally, for its leadership in promoting **multi-disciplinary research** and an **entrepreneurial attitude**.

## General Mission

- The Computer Science Department prepares students through comprehensive educational programs so that its students can make valuable technical contributions to **design, development, and production** in their practice of computer science and related engineering or application areas;

- The Computer Science Department performs high impact research in selected areas and commercializes its research results to improve the quality of life in Kentucky and beyond.

### Urgent Mission

- develop a **strategic plan** to bring the department to a new level of success without significantly increasing the size of the department.

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