From the Men in the Moon to 2001 and Beyond: The Evolving Social and Ethical Impact of Computers

A Session to Commemorate SIGCAS' 40th Anniversary

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1. SUMMARY

The session, which is being held on the occasion of SIGCAS' 40th Anniversary, will provide a historical perspective on curricular efforts to address the profound social and ethical impact of the rapid development of computer technology since its widespread deployment in the 1960's. Presenters, who represent veteran and newer members of SIGCAS, are in the process of developing a variety of innovative approaches to incorporating computer ethics and social impact issues into their computer science curricula, and will discuss their efforts to engage students in the study of the larger context of computing. Audience members will be encouraged to contribute experiences and ideas, and to learn how their involvement in SIGCAS can further the development of curriculum in this area.

Categories and Subject Descriptors

K.2 [**History of Computing**]; K.4.0 [**Computers and Society**] : General; K.5.0 [**Legal Aspects of Computing**]: General; K.7.0 [**The Computing Profession**]: General.

General Terms:

Human Factors, Legal Aspects

Keywords

Computer ethics, computer ethics pedagogy, social impact of computing, service learning, access to computing.

2. DIANNE MARTIN

For forty years, ACM's Special Interest Group on Computers and Society (SIGCAS) has been addressing the social and ethical consequences of widespread computer usage. The organization's goals are to raise awareness of the impact that computer technology continues to have on society and to support and advance the efforts of those who are involved in this important work. As watchdog and social conscience for the computing field, SIGCAS and its members have made significant contributions to the computing profession over the past four decades, including the development of the ACM Code of Ethics [3], the authoring of the first set of curricular guidelines for the teaching of computer ethics [1], and the publication of comprehensive computer ethics bibliographies that have included textbooks, popular articles and scholarly sources [4]. As new and increasingly more complex issues arise from our reliance on powerful computing technology, SIGCAS' role continues to grow in importance.

3. KATHERINE (KATE) DEIBEL

Integrate the social and ethical issues of access, usability and diversity into the CS curriculum by addressing issues of importance to people with disabilities.

The ACM Code of Ethics mandates that all people, including those with disabilities, should have "...equal opportunity to participate in, or benefit from, the use of computer resources," This suggests that computing educators, researchers and practitioners have an ethical responsibility to consider disabled

people in their work. In our CS curricula, addressing disability is a means for directly realizing and addressing human diversity.

In fact, the disabilities of an estimated 650 million people worldwide vary dramatically in both severity and type. Creating technology for people with disabilities makes all too clear the fallacy of a policy of designing for a single type of user. In particular, the programmer can no longer simply envision him or herself as the "typical" user, but must broaden his or her perspective to appreciate the importance of technology to diverse populations.

Computer science educators must begin to properly recognize and respect the diverse community of computer users with disabilities, so that they can provide students with a greater awareness of the breadth of computer users. I will present techniques that have been effective in educating computer science faculty, students, and industry leaders about the social, legal, educational, and technological aspects of disabilities in the world today.

4. JOSEPH OLDHAM

Integrate the breadth of computers and society topics into the CS curriculum by offering targeted mini-courses on controversial topics of great interest to students.

A series of mini-courses, each a single credit hour, can provide students with timely, interesting, in-depth study of issues such as intellectual property, privacy, cyberporn, Internet governance and electronic voting. In this venue, students learn ways of thinking about and of connecting social issues to computing that are transferable to other topics. It is possible to connect to courses with standard curriculum by, for example, scheduling a mini-course on a privacy-related topic concurrently with a database course and one on cyberporn with a networking course.

5. TARSEM (SEMMY) PUREWAL

Integrate the social and ethical issues of access and professional responsibility into the CS curriculum by providing service learning experiences for students.

Service learning is a relatively new form of active learning pedagogy that advances learning objectives via community service projects. When properly done, it increases student engagement, improves learning outcomes and raises students' awareness of the social value of their knowledge and skills.

Computer Science stands to gain a great deal from this form of student engagement. From my firsthand experience with a service learning project involving a grassroots non-profit organization in Athens, GA, I have seen students with minimal backgrounds in CS and IT meaningfully contribute to the community while enthusiastically learning about the practice of computing. I believe that exposure to real-world applications of technology in meaningful settings provides students with the incentive to want to learn more and it centers our discipline in a context in which people matter.

In this session, I will describe the history, details and outcomes of the Free IT Athens project, and provide a framework for identifying and implementing effective service learning projects.

6. CAROL SPRADLING

Provide CS faculty with adequate resources and professional development to enable them to effectively address computer ethics and social impact issues throughout the curriculum.

Social and professional knowledge units have been included in computer science curriculum reports since 1991, with the Computing Curricula 2001: Computer Science report calling for 17 hours of ethics coverage. Research results from a 2005 study [2] show that, while most computer science faculty support the inclusion of ethics coverage in their curricula, many of these educators believe that they lack the background, experience and resources to provide effective computer ethics instruction. Unfortunately, only 23% of the surveyed departments support professional development for faculty in this area.

I will discuss approaches to providing computer science educators with faculty development opportunities in computer ethics pedagogy.

REFERENCES

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