Computer Science and Other Disciplines

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Outline

- 1992  Computing the Future,  
  A Broader Agenda for Computer Science  
  Edited by Juris Hartmanis and Herbert Lin, NRC-CSTB

- 2002  What has changed?

- Future  What should Change?
The questions:

- What is CS&E?
- How is the field doing?
- What should the field be doing?
- What does the field need in order to prosper?
Computing the Future: The Priorities

- Sustain the core effort in CS&E
- **Broaden the field !!**
- Improve undergraduate education
Computing the Future: More Specifically

- The interaction of CS&E with other disciplines is likely to lead to intellectual insights and developments in both CS&E and those other disciplines that would not otherwise be possible.

- PhD granting departments should require an outside minor ... not only in science and engineering but also fields such as economics and finance.
Interdisciplinary Research  2002

- Considerable progress in interdisciplinary research, with serious understanding of the other disciplines:
  - Bio-informatics and Bio-computing
  - DNA Computing
  - Quantum Computing
  - Phase Transitions in Physics and Computation
  - Application of intelligent data mining and learning theories in other sciences
Future CS-Interdisciplinary Research

- Outstanding opportunities for interaction with other sciences as the intellectual processes in these sciences are automated.
- The basic concept of a theory may have to change as we automate sciences dealing with great complexity and immense amounts of information.
- These interactions can enrich computer science and make essential contributions to other disciplines.