Computer Science and Other Disciplines

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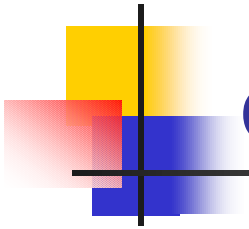
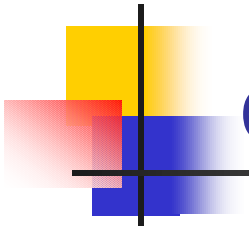


Outline

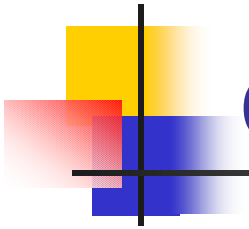
- 1992 Computing the Future,
  A Broader Agenda for Computer Science
  Edited by Juris Hartmanis and Herbert Lin , NRC-CSTB
- 2002 What has changed?
- Future What should Change?



Computing the Future

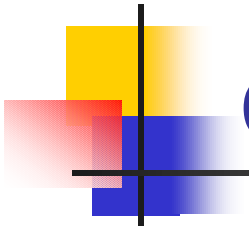
- **The questions**:

- What is CS&E ?
- How is the field doing ?
- **What should the field be doing ?**
- What does the field need in order to prosper?



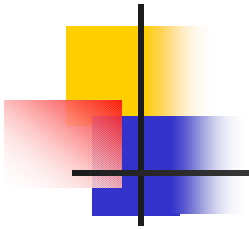
Computing the Future: The Priorities

- Sustain the core effort in CS&E
- **Broaden the field !!**
- Improve undergraduate education



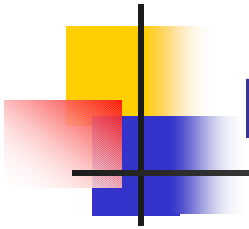
Computing the Future: More Specifically

- 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.