Understanding Networked Applications: A First Course

Introduction to course

by

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Role of the Computer

Number cruncher

Information management

Communication

Time...

Scope

• Application perspective on networked computing
  – Major applications
  – Capabilities and limitations of the technology
  – Concepts and terminology of the technology
  – Policy and social context

Premise

• Networked applications and computing will be pervasive in your personal and especially your professional life
• End-users can conceptualize better ways to use the technology (and this is the only way to make major progress), but
• To participate, you need a basic understanding of the technology and how it can be used

Goals

• Conceptualize and analyze realistic new networked computing applications
• Work effectively with implementers to realize those ideas
• Be able to track current and future industry developments
• Understand related policy and social issues

Goals (con’t)

• This course emphasizes concepts (habits of the mind)
• It is not a skills course
  – However, future added laboratory is likely
Goals (con’t)

• If this is your first course on computing:
  – You will develop a good idea of where to go next

• If this is your only course on computing:
  – You will be well positioned to follow and understand developments for some time

Limitations

• Survey course, broad set of topics like Econ 101
• Modern approach, but
  – Most deployed applications are legacy
  – Today’s modern approach is tomorrow’s legacy
• Broad coverage requires simplification and abstraction of many issues
  – Programming not emphasized
  – “The devil is in the details”

Limitations (con’t)

• “Alphabet soup” of acronyms avoided
  – But you should develop the background to “slurp the soup” if you want
• Narrowed choice of technical topics: relevance from an application perspective

Approach

• Top-down
• Emphasis on integrative concepts
• Application perspective
• Available analogies
• Non-technical and well as technical

Concepts

• Applications: group and organizational
• Complexity
• Architecture
• Infrastructure
• Legal, economics, and policy

Concepts (Con’t)

• Algorithms, protocols and interoperability
• Trustworthiness
• Processing, bitrate, delay
• Concurrency
• Scalability
Textbook

- *Understanding Networked Applications: A First Course* by D.G. Messerschmitt, Morgan Kaufmann, 1999
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