



College of Information Studies

University of Maryland Hornbake Library Building College Park, MD 20742-4345

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# Data, Information and Knowledge (and the delayed Introduction!)

Session 2

INST 301

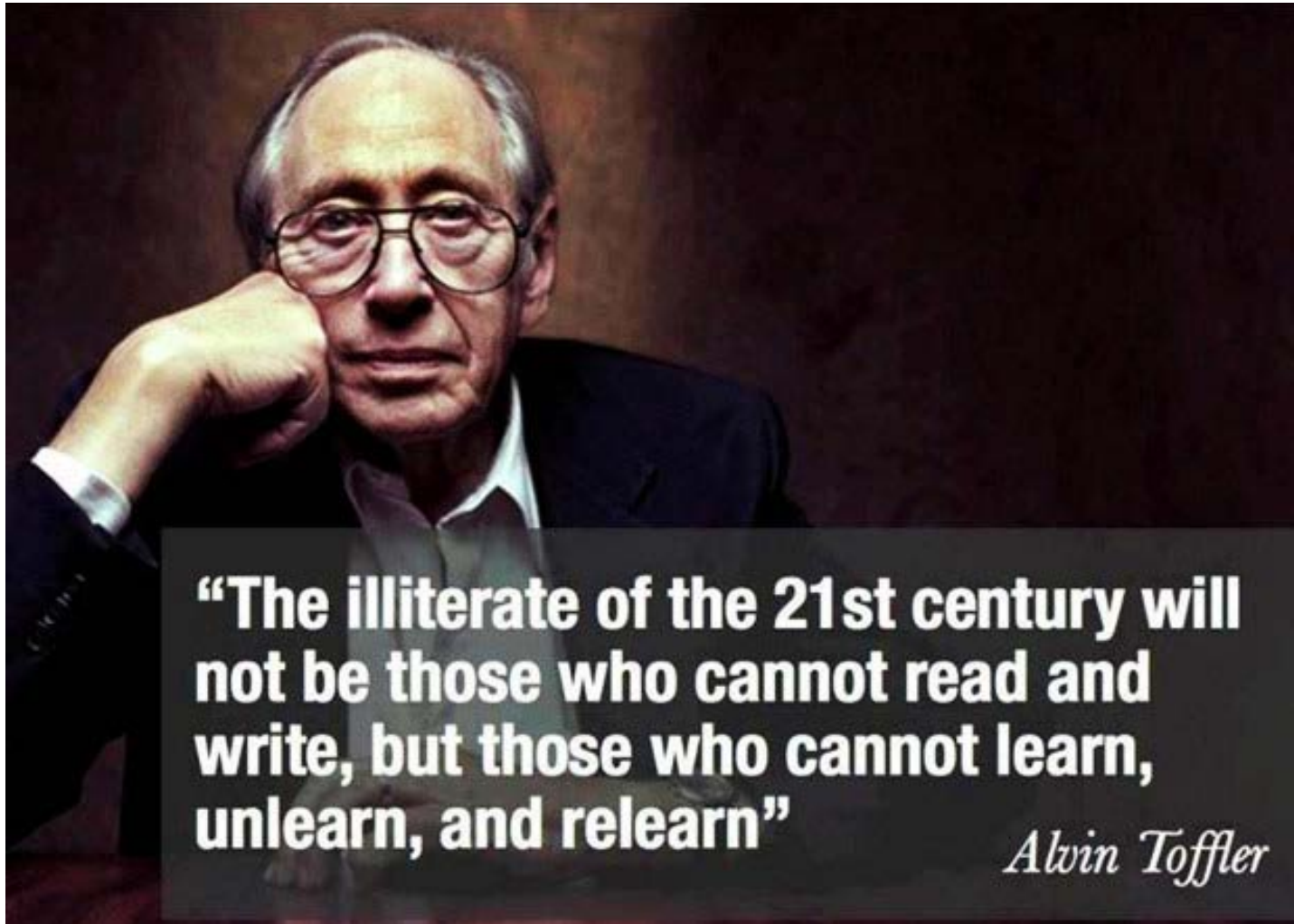
Introduction to Information Science

# Outline

## ➤ The Third Wave

- Data / Information / Knowledge
- All the usual stuff (syllabus, grading, ...)
- Information Science major

# What is a Futurist?



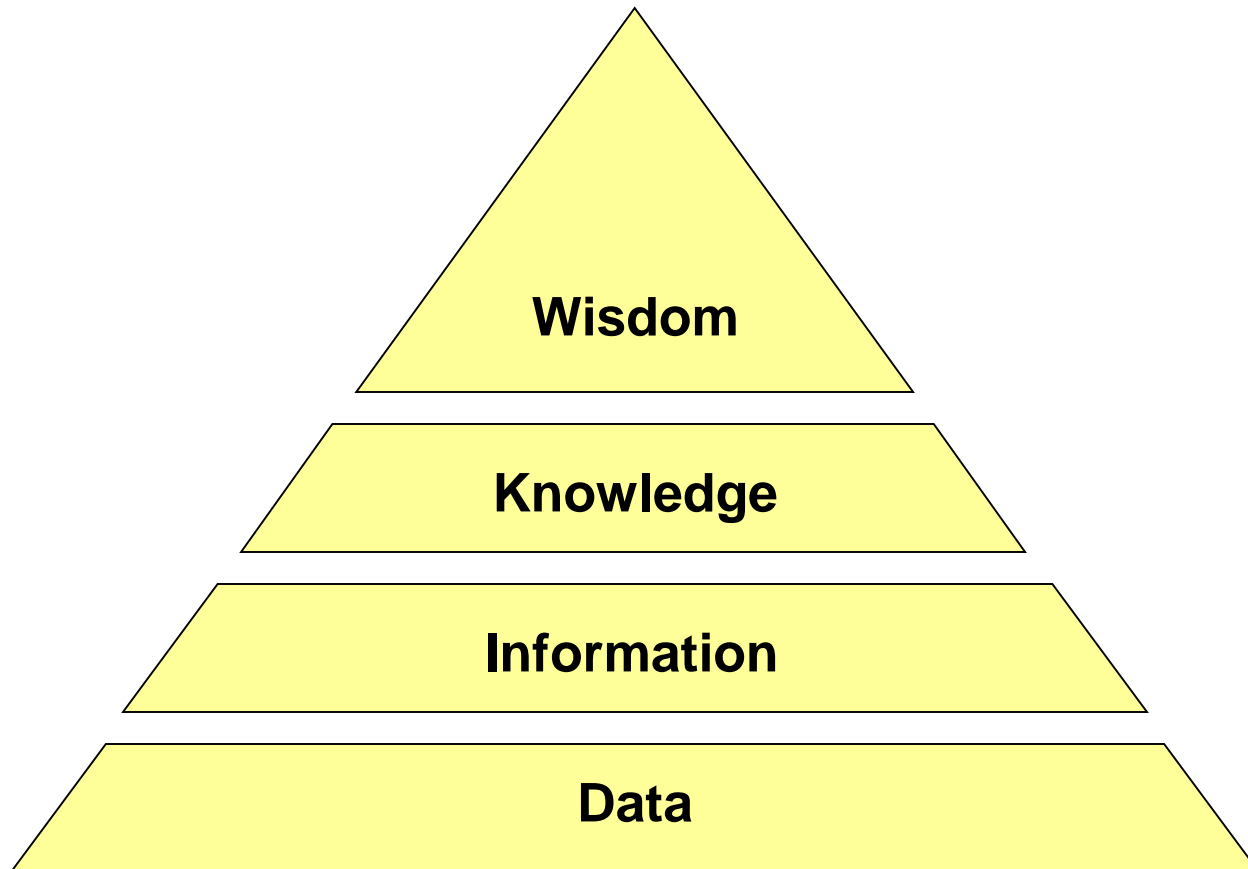
**“The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn”**

*Alvin Toffler*

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# “Information”



# Information Hierarchy

- Data
  - Raw “facts”
- Information
  - Contextualized facts
- Knowledge
  - Actionable contextualized facts
- Wisdom
  - Judgmental choices among possible actions

# An Example

- Data
  - 98.6° F, 99.5° F, 100.3° F, 101° F, ...
- Information
  - Hourly body temperature: 98.6° F, 99.5° F, 100.3° F, 101° F, ...
- Knowledge
  - If you have a temperature above 100° F, you most likely have a fever
- Wisdom
  - If you don't feel well, go see a doctor

# THE WORLD'S CAPACITY TO STORE INFORMATION

This chart shows the world's growth in storage capacity for both analog data (books, newspapers, videotapes, etc.) and digital (CDs, DVDs, computer hard drives, smartphone drives, etc.)

In gigabytes or estimated equivalent

1986  
ANALOG  
**2.62 billion**

DIGITAL  
**0.02 billion**

ANALOG STORAGE

DIGITAL

2000

2007  
ANALOG  
**18.86 billion gigabytes**

Paper, film, audiotape and vinyl: 6.2%

Analog videotapes: 93.8%

Other digital media: 0.8%\*

Portable media players, flash drives: 2%

Portable hard disks: 2.4%

CDs and minidisks: 6.8%

Computer servers and mainframe hard disks: 8.9%

Digital tape: 11.8%

DVD/Blu-ray: 22.8%

PC hard disks: 44.5%

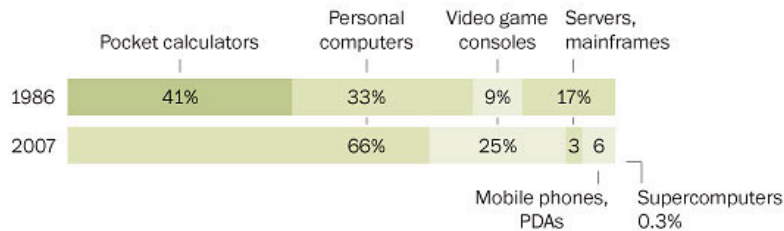
**123 billion gigabytes**

\*Other includes chip cards, memory cards, floppy disks, mobile phones/PDAs, cameras/camcorders, video games

## COMPUTING POWER

In 1986, pocket calculators accounted for much of the world's data-processing power.

Percentage of available processing power by device:



2007  
DIGITAL  
**276.12 billion gigabytes**



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# Course Description

- Introduction of information and knowledge management systems and their use by **organizations**.
- Concepts underlying
  - database,
  - information retrieval, and
  - knowledge management **systems** will be discussed.
- Focus on
  - the **processes** of becoming informed and
  - the products which result from those processes, as well as
  - the innovative approaches to information problem solving within an organization.

## Information (individual)

Information

Internet

Web

Search Engines

User Needs

Search Strategy

Social Networks

## Data (organization)

Enterprise Sys

Data as Asset

Data Modeling

Databases (2)

Databases

CMS

Linked Data

Data Mining

## Knowledge (society)

Lifecycle

Collaboration

Institutions

Professions

Digital Gov

Security

Privacy

Filter Bubble

Ethics

# Some “Subtexts”

- The nature of innovation
- The interplay of technology and society
- The role of technical competence
- Different ways of knowing and doing

# Approach

- Readings (done before class)
  - Acquire background
  - Can be consulted later as a source for details
- Class sessions
  - Develop conceptual structure
- Homework, Project
  - Gain hands-on experience
- Quizzes, exams
  - Focus effort, measure progress

# Structure

- Classes start promptly at 2 PM
  - End promptly at 3:15
  - Bring your devices and use them
    - But stay focused on the class discussion
- Quiz at start of class on Tuesday
  - Exceptions: today; exam days
- Homework due at start of class each Thursday
  - Exception: this week
- Team project during Module 3
- Three “open book” exams

# Grading

- 60% for individual work
  - 11 quizzes @ 2% each for your best 10
  - 3 exams @ 20% each for your best 2
- 20% for group work
  - Same grade for everyone in a project team
- 20% your choice (individual or group)
  - 8 assignments @ 4% each (but capped at 20%)
- No curve!
  - 90-100: some sort of A, 80-89: some sort of B, ...

# The Fine Print

- Group work is encouraged on homework
  - But you must personally write what you turn in
- Deadlines are firm and sharp
  - Allowances for individual circumstances are already included in the grading computation
- Academic integrity is a serious matter
  - No group work during the exams or quiz!es
  - Scrupulously respect time limits



# Contact Information

- Doug Oard:
  - Office: AVW 3126 (or, by arrangement, HBK 2118F)
  - Office Hours: Wednesdays 10-10:55 AM
  - I'm also usually happy to stay after class
  - Email: oard@umd.edu (answered within 24 hours)
    - Indicate if you do not want my answer sent to the class
- Jyothi Vinjumur
  - Office: AVW 3126
  - Office Hours: Mondays 4-5 PM
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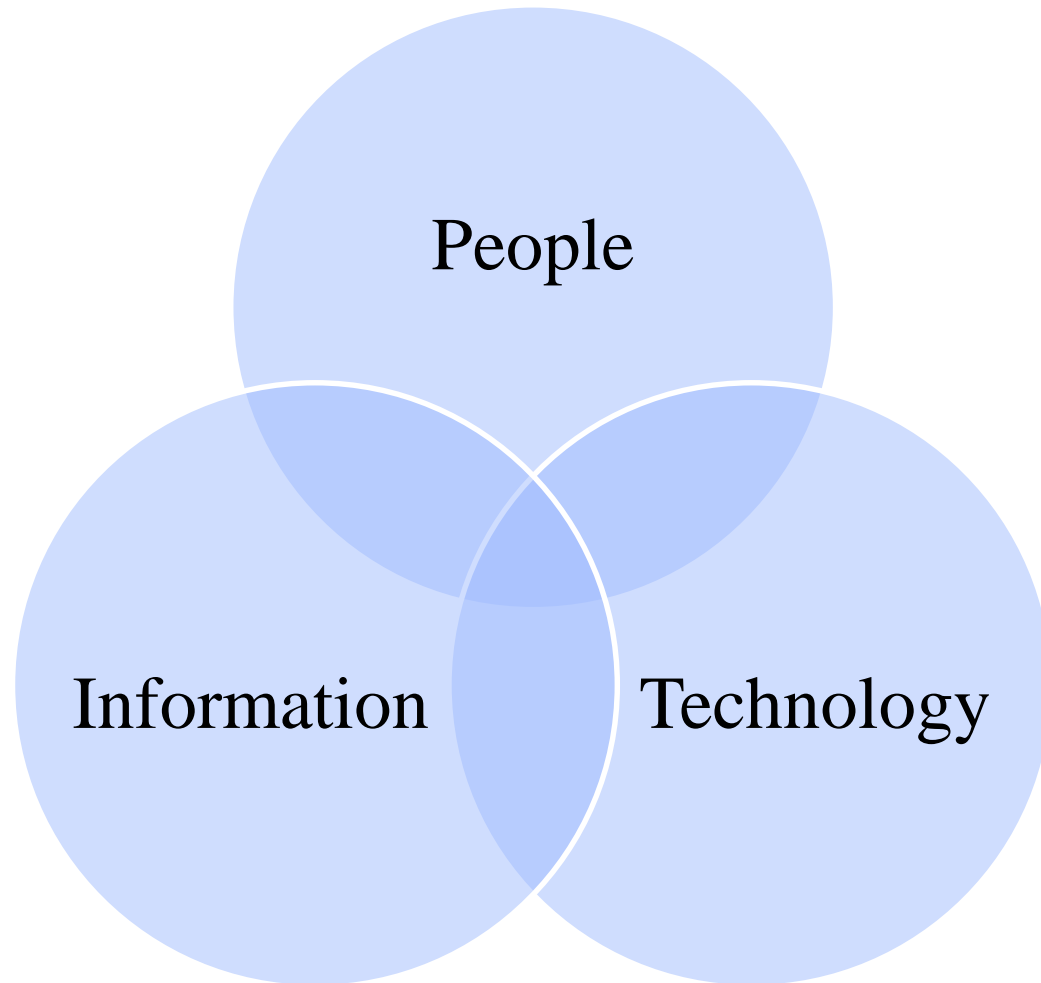
# A Personal Approach to Learning

- Work ahead, so that you are never behind
- Find new questions everywhere
  - Then find the answers somewhere
- Enrich your practical skills relentlessly
- Pick topics you want to learn more about

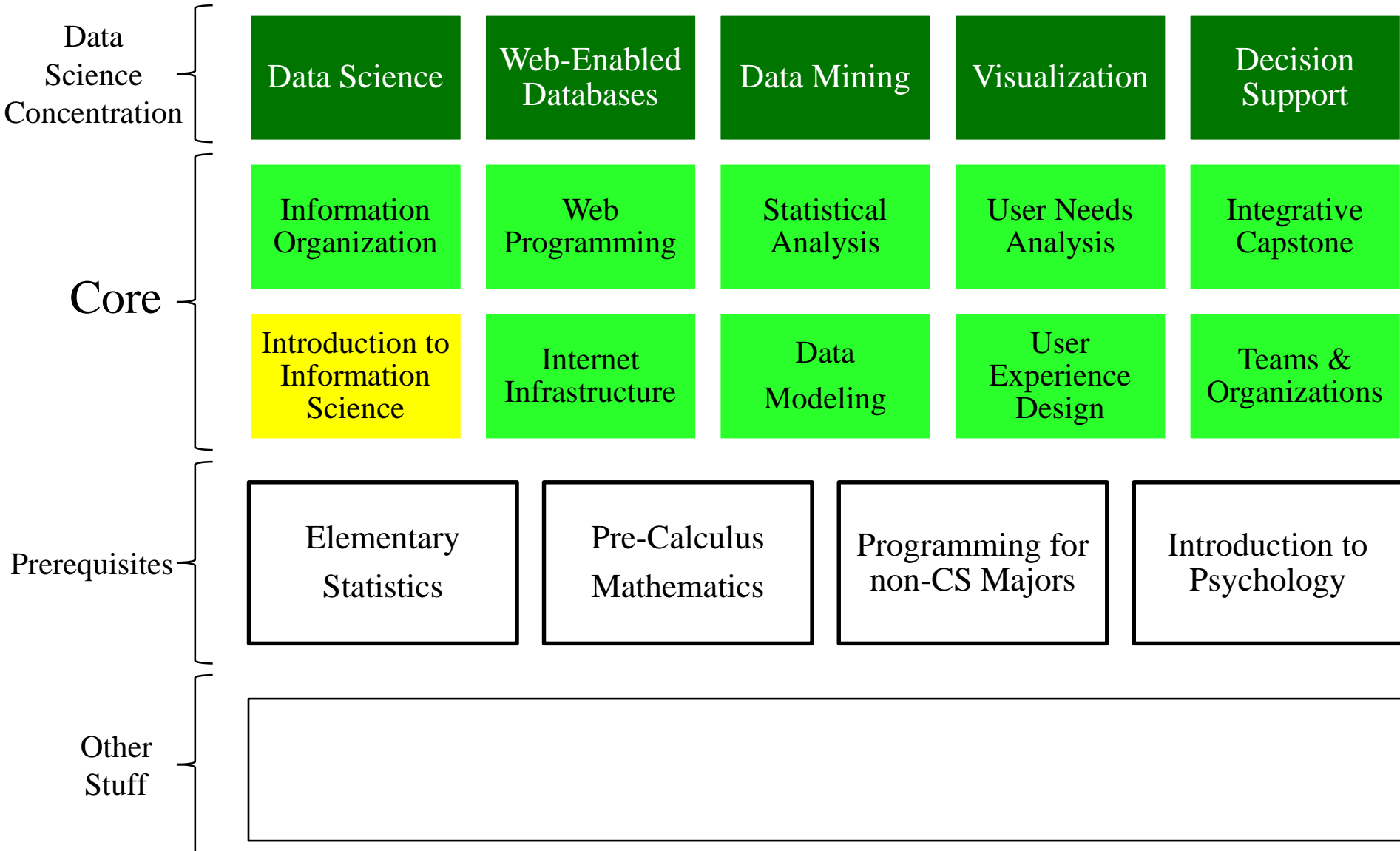
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# “Information Science”



# B.S. in Information Science



# Before You Go

- Please complete the ungraded survey