Present

• Not much new
  – All familiar problems still there
• Some “rebranding”
  – Networked environments
  – Components
  – Service oriented
  – Outsourcing
  – “Agile” movement

Future

• Ignorance is Still Rampant
• Parallelism Everywhere
• Massive Security Challenges
• Replace People with Automation
  – Static Analysis
Ignorance, An Example: Process

- CMM and CMMI
  - Interpreted as heavy handed processes
  - Often are
- “Agile”
  - Interpreted as “anything goes”
  - Excuse and cover for *&%$#@ practices

Constant over-correction

What is Agility?

Quickly find the right process for the problem at hand!
Apply it effectively!

« Jim Pichler

Required Reading

- No Silver Bullet: Essence and Accidents of Software Engineering
  - Frederick P. Brooks, Jr.
- The Mythical Man Month
  - Frederick P. Brooks, Jr.
  - Note that the book is old and there is some nonsense in there also.
- A Rational Design Process: How and Why to Fake it
  - David L. Parnas and Paul C. Clements
Emergence of Multicore Systems

- Improve sequential program performance
- Create parallel programs

New Processor Architectures

- General-Purpose (CPUs)
- Graphics Processing Units (GPUs)

Distributed Computing