Software Engineering

How does Software Engineering fit with other computing disciplines?
How Is Software Made?

Customer: I need something

Developer: I can make that something

THING: Now with features and such!
The Engineering Process

Analyze Problem → Design Solution → Build / Execute → Verify → Deploy → Maintain
Job Titles

- Requirements Gatherers
- UI Designers
- Developers
- Quality Assurance
- IT Specialist
- Customer Representatives
- Solutions Architects
- Coders
- Testers
- Operations
- Analyze Problem
  - Design Solution
  - Build / Execute
  - Verify
  - Deploy
  - Maintain
Focus of Different Disciplines

Computer Science
Theoretical Focus

Information Sciences & Technologies (IST)
Operational Focus

Analyze Problem → Design Solution → Build / Execute → Verify → Deploy → Maintain

Software Engineering
Application Focus
Software Engineering

Software Engineer

Analyze Problem → Design Solution → Build / Execute → Verify → Deploy → Maintain

Software Engineering
Application Focus
Pure Computer Science is interested in the theory, so failure of a concept to apply to a particular problem isn’t as important as the science.

IT/IS/IST avoids failure at all costs, because operational failure equates to a complete breakdown of their duties and objectives.

Software Engineering views failure as a learning opportunity, because their process has many steps and can be improved incrementally.
Word Processor
- Software provides functionality
- Hardware supports the software

Manufacturing Robot
- Hardware provides functionality
- Software supports the hardware