Software Engineering: What and Why?

CS 2720

Lecture 1.1
Bad News

Many software projects fail. Consider some statistics summarized from the Standish Group: 29% are successful, 22% are failures, 49% are "challenged". It is not hard to find numerous instances of software failures (see, for instance, 1, 2, 3, 4, 5).
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- “Coding” by itself does not include all the skills necessary to handle projects like these!
Define software engineering.
Define *software engineering*.

According to **ISO/IEC/IEEE 24765-2010**:

*Software Engineering: 1. the systematic application of scientific and technological knowledge, methods, and experience to the design, implementation, testing, and documentation of software.*

2. *the application of a systematic, disciplined, quantifiable approach to the development, operation, and maintenance of software; that is, the application of engineering to software*
Breaking Down the Definition

Note some of the items in the ISO/IEC/IEEE definition:

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- “...while reducing software production and operating costs (C) ...”
- “...and time to market (T).”
How can *software engineering* help us manage the differences between “personal” and “professional” software development in terms of PQCT?