

# Keynote Address

## Principles of Software Evolution

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### Abstract

Software evolution generally means that software can change its structure and functions to tolerate the change of its specification and operating environment in which it is used. It ranges from the very practical software maintenance to designing sophisticated software which can change its behavior autonomously according to the change.

Though it is widely recognized that evolution is one of the most important requirements for software which can survive, current software is not made to allow evolution in a reasonable cost. Furthermore, it is shared by many software researchers and practitioners that very complex software can only be built by evolving it starting from its simple version and adding functions.

Though a big amount of effort has been paid so far mainly in the area of software maintenance and reuse, it has been mainly requested and rushed by real and urgent demands of industries, like the legacy codes and the year 2000 problems, and the software evolution problem has not been studied enough from the scientific point of view. In this talk, I will look at some basic principles for software evolution and would like to propose fundamental research topics.