Abstract

Software reliability growth models started to be developed in an era where the waterfall model was king (or queen), but they are less useful in modern approaches to software development.
Thus, we have either to invent completely new ways of capturing the information that is hidden in failure data or we have to adapt the usage of the software reliability growth models to current ways of developing software. This paper is to show how statistical techniques can be used to manage the software development process, be it for productivity assessment or for source selection when software productivity data can be indexed, as in a time series, and then growth-curve models can be used to track the data for trends, and for making projections. There is a vast amount of literature on growth-curve models and consequently the choice of models is large. However, for purposes of illustration, we selected a simple power rule model, and motivated its relevance for monitoring software productivity the chosen model when suitably transformed is a random coefficient autoregressive process which, we recall, is also one of the dynamic linear models used to describe software inter failure times.

References


Index Terms

Computer Science

Software Engineering

Keywords
Software Reliability
Lognormal Distribution
Posterior Distribution
Productivity

Quality