

In this paper, we consider a nonparametric adaptive software rejuvenation schedule under a random censored data. For u failure time data and v random censored data, we formulate upper and lower bounds of the predictive system availability based on a nonparametric predictive inference (NPI). Then, we derive adaptive rejuvenation policies which maximizes the upper or lower bound. In simulation experiments, we show that estimates of the software rejuvenation schedule are updated by acquisition of new failure data, and converge to the theoretical optimal solution.

For digital gadgets, such as smartphones and tablets, manufacturers (or providers) usually offer a one year free-repair warranty against failures. This paper considers two types of failures. The first type of failure (Type-I failure) is a wear-out failure, which is warranted by the manufacturers. The second type of failure (Type-II failure) is an accidental failure, which is not warranted by the manufacturers. In this paper, we propose an extended warranty service contract covering both Type-I and Type-II failures between a provider and a customer. Aiming to contribute to the establishment of a method for determining a suitable price to the extended warranty service contract fee, this paper discusses the optimal strategy for the provider considering the reaction of the customer.