

Factorial Design Analysis for Quality of Video on MANET

Authors : Hyoup-Sang Yoon

Abstract : The quality of video transmitted by mobile ad hoc networks (MANETs) can be influenced by several factors, including protocol layers; parameter settings of each protocol. In this paper, we are concerned with understanding the functional relationship between these influential factors and objective video quality in MANETs. We illustrate a systematic statistical design of experiments (DOE) strategy can be used to analyse MANET parameters and performance. Using a 2k factorial design, we quantify the main and interactive effects of 7 factors on a response metric (i.e., mean opinion score (MOS) calculated by PSNR with Evalvid package) we then develop a first-order linear regression model between the influential factors and the performance metric.

Keywords : evalvid, full factorial design, mobile ad hoc networks, ns-2

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