

A mean-value performability assessment of IoMT systems based-on stochastic reward net and fuzzy Lz-transform method

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Abstract

This paper presents a predictive approach for uncertainty mean-value performability modeling and assessments framework of Internet of Medical Things (IoMT) System (IoMTS) based-on the Stochastic Reward Nets with Fuzzy parameters (FSRNs) and Fuzzy Lz-transform method (FLz-TM). This framework allows the development of compact models and efficient evaluation of the availability and cost security impact in which is used a proactive defense time-based Moving Target Defense technique. The application of FSRN and FLz-TM considerably improve computational efficiency of performability analysis, avoiding the curse of IoMT system states dimensionality. A numerical case study for mean-value performability analysis of a particular IoMT is given to show the effectiveness of proposed approach.

Keywords: fuzzy numbers; modeling; performability; systems

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