

Applications of Spiking Neural Network to Predict Software Reliability

Ramakanta Mohanty¹, Aishwarya Priyadarshini², Vishnu Sai Desai³, G. Sirisha⁴,
ramakanta5a@gmail.com, aishwarya8skys@gmail.com, vishnudesai196@gmail.com^{1, 3, 4}
Department of Computer Science & Engineering

^{1, 3, 4} Keshav Memorial Institute of Technology, Narayanaguda, Hyderabad-500029,
Telangana State, India

²Department of Computer Science and Engineering

²International Institute of Information Technology, Bhubaneswar, India

Abstract – In the period of Software Improvement, programming dependability expectation turned out to be exceptionally critical for creating nature of programming in the product business. Time to time, numerous product dependability models have been introduced for evaluating unwavering quality of programming in programming forecast models. However, building precise forecast model is hard because of intermittent changes in information in the space of programming designing. As needs be, we propose a novel procedure, i.e. spiking neural system to anticipate programming unwavering quality. The key goal of this paper is to exhibit another approach which upgrades the exactness of programming unwavering quality prescient models when utilized with the product disappointment dataset. The viability of quality of a product is exhibited on dataset taken from literature, where execution is measured by utilizing standardized root mean square error (NRMSE) obtained in the test dataset.

Keywords: Software Reliability, Neural Network, Spiking Neural Network, Normalized Root Means Square Error

1 Introduction

Presently a-days numerous administration associations and corporates are digitized to expand their efficiency. As the product disappointments are expanding quickly, programming experts likewise focussed to enhance unwavering quality of programming. In this procedure, many models have been joined to gauge the product disappointments to meet the requests of telemarketing and digitization. Notwithstanding programming improvement, there are numerous other prerequisite to be satisfied with a specific end goal to handle the present situation of digitization viz. the phases of dependability of the product, security, convenience, upkeep and viable cost. The productivity of any product ventures relies on upon its quality, sturdiness and refreshing of programming with the changing requests of the clients [1]. The key motivation behind programming unwavering quality designing is utilized to help Engineer, Manager or client of programming figure out how to bring out exceptionally precise items. A moment point is to create programming exactly mindful of programming unwavering quality by focussing on it. A correct choice can keep time and cash on a venture and amid the life time of the product in various ways [2].

Programming dependability is the most vital elements that are identified with shortcomings and deformities. An essential segment of programming dependability is programming quality, usefulness, execution, capacity, ease of use, openness, serviceability and support. As of late, industry had put developing significance on programming constancy and has embarked to utilize and apply the hypotheses creat

