

3rd International Conference and Exhibition on Pharmacovigilance & Clinical Trials

October 27-29, 2014 Hyderabad International Convention Centre, India

Artificial neural network: A data mining tool in pharmacovigilance

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Pharmacovigilance concerns with the gathering, detection, assessment, monitoring, and interference of adverse effects with pharmaceutical product. Data received from patients and healthcare providers via Pharmacovigilance Agreements (PVAs), further as different sources like the medical literature, plays a vital role in providing the information necessary for pharmacovigilance to take place. Firms are assembling data for many years, building huge knowledge warehouses to store it from terabytes to pentabytes. Even though this knowledge is offered, only a few corporations are ready to notice the particular price hold in it. The question these corporations are asking is a way to extract this worth. The solution is data mining. Seven common strategies and techniques of data mining that are the strategies of statistical analysis, rough set, covering positive and rejecting inverse cases, formula found, fuzzy method, further as visualization technology Artificial Neural Network (ANN) or usually Neural Network (NN) is that the most stringent selection for data processing. Neural networks have emerged as advanced data processing tools in cases wherever different techniques might not turn out as satisfactory prognosticative models. As the term implies, neural networks have a biologically inspired modeling capability, however are basically statistical modeling tools. Neural computing refers to a pattern recognition methodology for machine learning. The ensuing model from neural computing is commonly referred to as an artificial neural network (ANN) or a neural network. During the 1940s, McCulloch and Pitts (1943) introduced the primary mathematical model of the neuron and incontestably suggested that networks of neurons with easy outputs could, in essence, compute any arithmetic or logical function. ANNs clearly give refined and up-to-date techniques capable of modeling terribly advanced functions. Ancient modeling depends heavily on linear techniques, as many optimization routines exist for linear solutions. However, linear techniques aren't universally applicable, and wherever applied in non-linear situations, modeling results are usually poor. Since they're semi-parametric, they will consider learning advanced patterns within the knowledge directly, while not user intervention. Indeed, in several situations, the spatiality of the problem might overwhelm human analysis. The results generated by a neural network may be generalized and applied to new or unseen knowledge with comparatively high performance. Thus, ANNs provide a replacement approach to solving problems and distinctive patterns, by providing tools that learn by themselves, while not the need of consultants or specialized computer programming. Thus, neural networks are getting very hip with data processing practitioners, notably in medical analysis, finance and marketing. This is often as a result of the need proven their prognosticative power through comparison with different statistical techniques victimization real knowledge sets. Due to design issues neural systems would like additional analysis before they're wide accepted in industry. As software system corporations develop a lot of sophisticated models with easy interfaces the attraction to neural networks can still grow. The mix of knowledge mining technique and neural network model can greatly improve the potency of knowledge mining strategies, and it's been widely used. For best results with neural networks an operating data of statistical models is desired. With all the common material between the two disciplines, neural networks and statistics, higher communication between them would be advantageous to each.

Biography

Prithviraj Chakraborty, serving as Assistant Professor at Bengal College of Pharmaceutical Sciences and Research, West Bengal has more than seven years of experience in academics and deals with the area of academics and research for welfare of society, has submitted his thesis for the award of the degree of Doctor of Philosophy (PhD) for his research work relating to development of quick dissolving wafers and statistical optimization. He is the author of more than 5 national and 10 international papers published in reputed journals and is member of different national and international working groups and also life member of APTI. He is the Associate Editor-in-Chief and Editorial Board member of various national and international Journals.

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