Optimizing Recruitment and Personnel Selection in Organizations using Soft Computing Techniques

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Abstract

Recruitment process is one of the important responsibilities of the HR department of any organization. Selection of the best and appropriate candidates from a pool of candidates is a critical task involving many tedious rounds before the final selection. This process consumes much time, effort and energy of the management. To optimize and automate this process of recruitment many computational and mathematical models have been proposed. Soft computing which is a collection of many statistical, probabilistic and optimization techniques like neural networks, fuzzy systems, probabilistic reasoning etc has been widely used in organizations for optimizing the recruitment process. This paper briefly studies various soft computing techniques that have been proposed by researchers across the globe for optimizing recruitment and personnel selection in organizations.

Keywords -data mining, fuzzy logic, neural network, personnel, recruitment, soft computing.

I. Introduction

Human are the most essential resource of an organization without which companies cannot stay alive. They need the best candidates to gain competitive advantage and survive in the global market. Since, there is a dirth of talented individuals; there is always a competition between the firms to recruit the best person. In order to accomplish this task there is huge demand of

modern technologies which can assist firms in finding the best candidate. One of the emerging and popular techniques in this direction is soft computing that deals with making intelligent machines possessing reasoning and logical behavior like human beings.

[1] Soft computing is a multi-disciplinary field, consisting of various computing paradigms like neural networks, fuzzy logic systems, probabilistic reasoning and evolutionary computation etc. Unlike traditional computing or hard computing that is based on mathematical techniques such as crisp systems, binary logic, numerical analysis and finite element analysis and require precise model built on accurate data without any uncertainty and ambiguity,[2] Soft computing deals with approximate models, is tolerant of imprecision. uncertainty, partial truth, and approximations and gives solutions to complex real-life problems. Such problems are difficult to solve using hard computing (traditional methods). Soft computing models the remarkable property of human brain to learn from examples and make machines intelligent artificially. They have brought revolutions in the field of automation. Today soft computing techniques are used in a wide range of applications ranging from medical, engineering, robotics, defense, management, software engineering, agriculture, environment, etc. One of the important applications of soft computing is in HR function, i.e. assisting managers in the recruitment of right candidate at the right time for the right job to ensure long term success of the organization since human resource is the vital resource of any institution. Traditional process of recruitment is often lengthy, time consuming and complicated involving several rounds of filtration starting with scrutiny of resumes, followed by written test, group discussion, psychological test, personal interview, etc.

It is very difficult to quantify the qualitative attributes of the candidate, for instance personality, perception, creativity, leadership quality and decision making skills. To deal with these fuzzy, uncertain and imprecise data, Soft computing techniques are proving to be very useful. Personnel selection and recruitment systems for HR functions based on Neural networks, Fuzzy logic systems, and hybrid systems have been proposed. We will briefly study some of the important frameworks that have been developed for optimizing and automating the recruitment process in organizations.

61