

ACADEMIC PERFORMANCE EVALUATION USING FUZZY C-MEANS

¹RAMJEET SINGH YADAV & ²P. AHMED

¹Research Scholar, Department of Computer Science and Engineering, School Engineering and Technology, Sharda University, Greater Noida, UP, India

²Professor, Department of Computer Science and Engineering, School Engineering and Technology, Sharda University, Greater Noida, UP, India

ABSTRACT

In this paper we explore the applicability of K-means and Fuzzy C-Means clustering algorithms to student allocation problem that allocates new students to homogenous groups of specified maximum capacity, and analyze effects of such allocations on the academic performance of students. The paper also presents a Fuzzy set and Regression analysis based Dynamic Fuzzy Expert System model which is capable of dealing with imprecision and missing data that is commonly inherited in the student academic performance evaluation. This model automatically converts crisp sets into fuzzy sets by using C-Means clustering algorithm method. The comparative performance analysis indicates that the student group formed by Fuzzy C-Means clustering algorithm performed better than groups formed by K-Means and Hard C-Means clustering algorithms.

KEYWORDS: Fuzzy Logic, Clustering, K-Means Algorithm, Hard C-Means Algorithm, Fuzzy C-Means Algorithm, Fuzzy Expert Systems, Membership Function and Academic Performance Evaluation