Beth Dietz-Uhler & Janet E. Hurn show the importance of using learning analytics in predicting and improving the student’s performance from a faculty perspective. They show the list of universities that used learning analytics, the learning analytics tools that are available and the way how faculty can make use of data to monitor and predict student performance[]. They emphasizes on several factors that have impact on the importance of students. Such as: interest, ability, strengths etc.

Roshani Ade & P. R. Deshmukh proposed an incremental learning approach for prediction of student’s career choice using pair of classifiers. Students’ scores from the psychometric test have been used as training dataset and the dataset contains 1333 records with 14 attributes []. The proposed incremental algorithm is an ensemble of a pair of classifiers. First classifier in the pair is for generating the hypothesis and the second one is for weight updating. The dataset is divided into several chunks and the hypothesis is generated for each of the chunks. The final hypothesis is selected using weighted majority voting rule []. They have obtained an accuracy of 90.8% for their proposed algorithm [].

Sudheep Elayidom, Dr. Sumam Mary Idikkula, and Joseph Alexander conducted a research to predict job absorption rate and waiting time needed for 100% job placement, for different engineering courses in India. They obtained the data about passed out students from NTMIS (National technical manpower information system) NODAL center in Kochi, India. The attributes extracted from the data are Roll no of the candidate; month and year he joined the company. They used linear regression technique to figure out the percentage of students that will be placed in a particular branch in a particular year in the future. For waiting time prediction for 100% placement, they calculated placement rate status for a particular batch for a period of every 3 months for each year. From this data, with the help of curve fitting concept and regression modeling, they predicted the time needed to attain 100% placement for the given batch. The purpose of job absorption rate prediction is to reduce the troubles of those who are responsible for displaying the statistics and also the students seeking for colleges which can guarantee them a secure future. Waiting time prediction is useful in the sense that more the waiting time for a branch, more will it indicates that intake for the coming years should be reduced.

Lokesh S. Katore, Bhakti S. Ratnaparkhi and Dr. Jayant S. Umale proposed C4.5 algorithm for career prediction and recommendation method based on personal traits. The dataset is collected via questionnaires answered by the students. They started with 110 instances with 12 attributes. Values of the attributes are gained from the answer of questions. They tried several algorithms (Simple Cart, K Star, Naïve Bayes and C4.5) for classification but the C4.5 achieved the highest accuracy of 86%. The aim of the research is to analyze the psychological condition of the students and recommend them career [].

Brijesh Kumar Bhardwaj and Saurabh Pal conducted a research on student’s performance prediction using classification. Predicting a student’s performance is very important in educational environments. Students’ academic performance is based upon diverse factors like personal, social, psychological and other environmental variables. They collected the data of passed out students from different degree colleges and institutions affiliated with Dr. R. M. L. Awadh University, Faizabad, India. They had 16 attributes initially. But they came up with 7 attributes (Students grade in Senior Secondary Education, Living Location, Medium of Teaching, and Mother’s Qualification, Students other Habit, Family annual income status and Students family status) after filtering attributes based on high potentiality of the variable. They used Naïve Bayes algorithm for classification.

Nikita Gorad, Ishani Zalte, Aishwarya Nandi & Deepali Nayak conducted a research on career counseling using data mining. The purpose of the research was to develop a system that helps a student studying in high school selecting a course for his/her career based on three factors: personality trait, interest and capacity. They collected the data via survey questions performed on the students studying in different courses and achieved the values of the three factors from the answers. They used C5 decision tree algorithm on the dataset to derive the decision tree for different courses. Based on the values of the three factors, the system helps the high school students to choose a course for their career using data mining algorithm.

Baradwaj and Pal conducted a research on performance prediction of the students based on attributes: ‘Previous Semester Marks’, ‘Class Test Grades’, ‘Seminar Performance’, ‘Assignments’, ‘General Proficiency’, ‘Attendance’, ‘Lab Work’ and ‘End Semester Marks’. They collected the data from VBS Purvanchal University, Jaunpur (Uttar Pradesh) on the sampling method of computer Applications department of course MCA (Master of Computer Applications) from session 2007 to 2010[]. The initial data size was 50. Based on the passed out student’s data, they predicted the existing student’s ‘End Semester Marks’ using ID3 decision tree algorithm. According to them, predicting student’s performance will help identifying those students which needed special attention to reduce fail ration and taking appropriate action for the next semester examination[].

Amjad Abu Saa conducted a research on performance prediction of the students using data mining. The objective of this study is to predict performance of the students in the upcoming semesters by discovering the relations between students’ personal and social factors, and their educational performance in the previous semester using data mining tasks[]. The data was collected via survey and initially 270 responses are recorded. From the data, 24 attributes are extracted. The model technique used is Classification. Different classification algorithms were run initially but eventually CART decision tree algorithm is selected as the classification model based on highest accuracy score.

Surjeet Kumar Yadav & Saurabh Pal conducted a research on prediction for performance Improvement of Engineering Students using classification []. Three different classification techniques (C4.5, ID3 and CART) are used. The outcome will be the number of students who are likely to pass, fail or promoted to next year. The dataset used for this survey is collected from the enrollment form filled up by the students at the time of admission from VBS Purvanchal University, Jaunpur. The most accuracy attained by the c4.5 algorithm (66.778%). The results provide steps to improve the performance of the students who were predicted to fail or promoted [].

**References:**

1. UD Beth, HE Janet, “Using Learning Analytics to Predict (and Improve) Student Success: A Faculty Perspective”, Journal of Interactive Online Learning 2013; 12:17-26.
2. Roshani Ade and P. R. Deshmukh, “Efficient Knowledge Transformation System Using Pair of Classifiers for Prediction of Students Career Choice”, International Conference on Information and Communication Technologies (ICICT 2014).
3. Sudheep Elayidom, Dr. Sumam Mary Idikkula, and Joseph Alexander, “Applying Data mining using Statistical Techniques for Career Selection”, International Journal of Recent Trends in Engineering, Vol. 1, No. 1, May 2009.
4. Lokesh S. Katore, Bhakti S. Ratnaparkhi and Dr. Jayant S. Umale, “Novel Professional Career prediction and recommendation method for individual through analytics on personal Traits using C4.5 Algorithm”, 2015 Global Conference on Communication Technology (GCCT 2015).
5. Brijesh Kumar Bhardwaj and Saurabh Pal, “Data Mining: A prediction for performance improvement using classification”, (IJCSIS) International Journal of Computer Science and Information Security, Vol. 9, No. 4, April 2011.
6. Nikita Gorad, Ishani Zalte, Aishwarya Nandi & Deepali Nayak, “Career Counselling Using Data Mining”, International Journal of Innovative Research in Computer and Communication Engineering (An ISO 3297: 2007 Certified Organization) Vol. 5, Issue 4, April 2017.
7. Brijesh Kumar Bhardwaj and Saurabh Pal, “ Mining Educational Data to Analyze Student’s Performance”, (IJACSA) International Journal of Advanced Computer Science and Applications, Vol. 2, No. 6, 2011.
8. Amjad Abu Saa, “Educational Data Mining & Students’ Performance Prediction”, (IJACSA) International Journal of Advanced Computer Science and Applications, Vol. 7, No. 5, 2016.
9. Surjeet Kumar Yadav & Saurabh , “Data Mining: A Prediction for Performance Improvement of Engineering Students using Classification”, World of Computer Science and Information Technology Journal (WCSIT) ISSN: 2221-0741 Vol. 2, No. 2, 51-56, 2012.