Predicting Job Change among Data Scientists using Machine Learning Technique

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Https://doi.org/10.35609/gcbssproceeding.2022.2(77)

ABSTRACT

In the knowledge and data-driven economy, countless ramifications were attributed to great contribution of data scientists in transforming business and industries by using various data science tools in recognizing and generating patterns in data points to generate insights. The study aimed at applying data science in human resources, and generates actionable intelligence, and HR analytics to better understand employees' perception towards the company, work environment. The researcher used the processes of Knowledge Discovery in Databases (KDD) method. Knowledge discovery in databases is the nontrivial process of identifying valid, novel, potentially useful, and ultimately understandable patterns or relationships within a dataset (10,000 examples, 0 special attributes, and 14 regular attributes) to make important decisions. RapidMiner was used perform the KDD processes of selecting, pre-processing, data transformation, data mining using machine learning algorithm. Accordingly, Decision Tree was found to be the learning algorithm fit for the ExampleSet. Further, among 14 attributes, the most important attribute to split on was the city_development_index. This implies that the best predictor variable for job change among data scientists was the city_development_index. Consequently, the prediction model has 92.1% confidence that a Male who works in a city with a development index of 0.920, with relevant data science experience, not presently enrolled in the university, high school graduate, with 5 years of work experience, presently working in a Funded Start-up company with 50-99 employees, works for the first time with training hours=24 was predicted will "Not Change" a job. The model has 77.78% accuracy, and 81.70% precision.

Keywords: Data Scientist, Data Science, Job Change, Human Resource Analytics