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Skill-Employability Development Models (SEDM) based on Academic Data Mining (ADM)

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Abstract—10 scientific techniques are used to analyze the academic data in this paper. Hence the new factors are obtained to generalize the objective of academics. The illustration is given in this paper for applying this compact method to the academic institutes. New algorithm is proposed to execute the model. These big data have been unutilized mostly. The present study is proposed several model based on modern scientific and computing technique for utilizing these big data. The applicability, usefulness, significance and importance of these big data are studied in this project.

Keywords—*Academic Data, Big Data.*

I. INTRODUCTION

World of Computing; everything comprises with the computer nowadays. The every work accelerates by the computing techniques. The academic world also revamped by this digitalization. The classical academic curricular transformed as modern digital education model. Every education institute has several data. Nowadays these data referred as big data.

These big data have been unutilized mostly. The present study is proposed several model based on modern scientific and computing technique for utilizing these big data. The applicability, usefulness, significance and importance of these big data are studied in this project. Basically the followings are applied in the compact form to analyze the academic data in this paper:

This paper generalizes the academic data by 10 discrete methods given as below:

1. Data mining
2. Soft computing
3. Statistical method
4. Optimization technique
5. Discrete mathematics
6. Set Theory
7. Neural network
8. Fuzzy logic
9. Fuzzy set
10. Artificial intelligence

II. RELATED WORK

Potgieter et al [1] presented some new models on big data of academics. In 2013, The employability traced over the discrete graph in this paper. The formulation of personality of the postgraduate students is generated.

In 2012, Pandey et al [5] define a new theory of data-job relationship by data mining technique.
Same year, edu-mining model is presented by Srimani et al [6]. This is a data classification based technique for generating the invariant points over the random data.

Samrat et al [4] analyzed the performance of engineering students by classification based data mining in 2013. Recruitment-academic performance is correlated in this paper.

The clustering method is proposed by Abu et al [3] in 2013. The employability became an algorithm in this skill-marks model.

Potgieter et al [1] presented some new models on big data of academics. In 2013, The employability traced over the discrete graph in this paper. The formulation of personality of the postgraduate students is generated.
Same year, an application of big data is discussed by Bangsuk et al [2]. The prediction technique is presented in this paper. The build classification based method is defined for the employability for the management students.

In 2014, Elizabeth et al [7] proposed a model on academic-business correlation. The good habits of the students trace on business in this model. The intelligence-behavior set is studied over the social performances.

Gong [23] generalized the students performance by the data warehousing. The data set classified under the context of discrete characteristics of the students.

Gao [20] set the rule on teaching-examination-business interrelationship. The advanced teaching management model is proposed in this paper.

In 2010, Yan et al [19] applied the rough sets on the academic data. The grading analysis of student's data is classified over the elements of the rough set.
In [24 – 28] prediction of student's performance is presented. Basically education data mining and its application is studied in these literatures.

III. METHODOLOGY

1. State the problem
2. Collect the academic data
3. Set the hypothesis.
4. Class the data
5. Map (4)
6. Inverse map of (5)
7. Structure (4)
8. Manage-rule of (4)
9. Apply optimization
10. Present (9) graphically
11. Analyze (10)
12. Represent algebraically
13. Formulate (12)
14. Compare (13) with the existed
15. Tabulate (14)
16. Review (15)
17. Design the model of (16)

IV. RESULTS AND DISCUSSION

1. Set the hypothesis:
   Ram has no SEC.
2. Class the data:
   $\geq 70\% : SEC$
   Otherwise,
   Required Training.
3. Map (4)
   $\geq 70\% \xrightarrow{1-1} SEC.$
4. Inverse map of (5)
   $\geq 70\% \xleftarrow[1-1]{} SEC.$
5. Structure (4)
   $[80 \quad 60 \quad 70]$
6. Manage-rule of (4):
   $SEC = f(Marks).$
7. Apply optimization:
   $Maximize, Z = 80x + 60y + 70z$
   $Such - that;$
   $x \geq 70$
   $y \geq 70$
   $z \geq 70$
   And,
   $x, y, z \geq 0.$
8. Present (9) graphically
   Solution: Bounded/Unbounded.
9. Analyze (10):
   To Slack/Surplus Variables.
10. Represent algebraically:
    $SEC = f(x, y, z).$
11. Formulate (12):
    $f(x, y, z) = \frac{\sum Marks}{3}.$
12. Compare (13) with the existed:
    $Error = (13) - 70.$
13. Review (15):
    $Minimize, (E_1, E_2, E_3)$
14. Design the model of (16):
    $English$
    $\downarrow$
    $Scinece$
    $\downarrow$
    $Mathematics$
    $\hookleftarrow$
    $Dynamic - \Pr ogram \min g$
    English: 80 marks
    Science: 60 marks
    Mathematics: 70 marks

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Authors Profile

Dr .Swati Jain's domain of the reerach is Data Mining. Academic Prediction is a specialised field.

Dr. Vikas Kumar Jain is a senior researcher in Organic Chemistry.

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