Experiment 06 : Implement Pattern Recognition in cognitive computing.

Learning Objective : Students should be able to apply Pattern Recognition for Cognitive Computing and solve problems.

Tool : RapidMiner

Theory :

Pattern recognition is a technique used in cognitive computing to classify and recognize patterns in data. Some common pattern recognition techniques used in cognitive computing include:

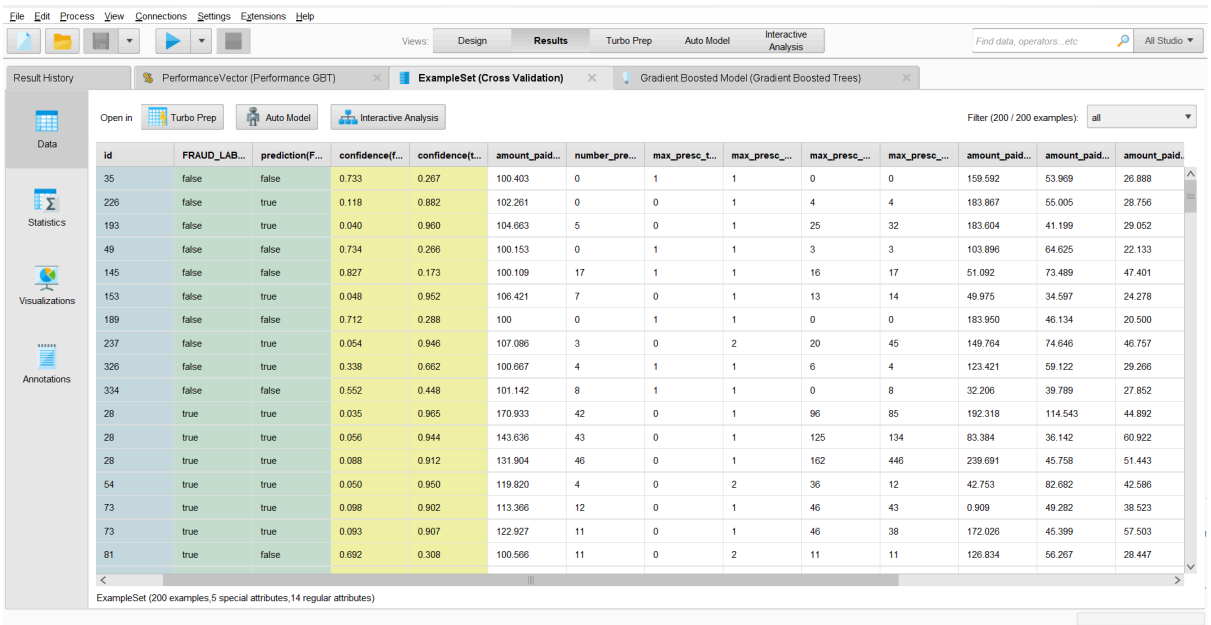
- Support Vector Machines (SVM)
- Artificial Neural Networks (ANN)
- Hidden Markov Models (HMM)
- Decision Trees
- K-Nearest Neighbors (KNN)

The choice of technique depends on the type of data and the problem to be solved. These techniques can be implemented using various programming languages such as Python, R, and Java. The choice of programming language depends on the specific requirements of the project and the availability of libraries for implementing the algorithms.

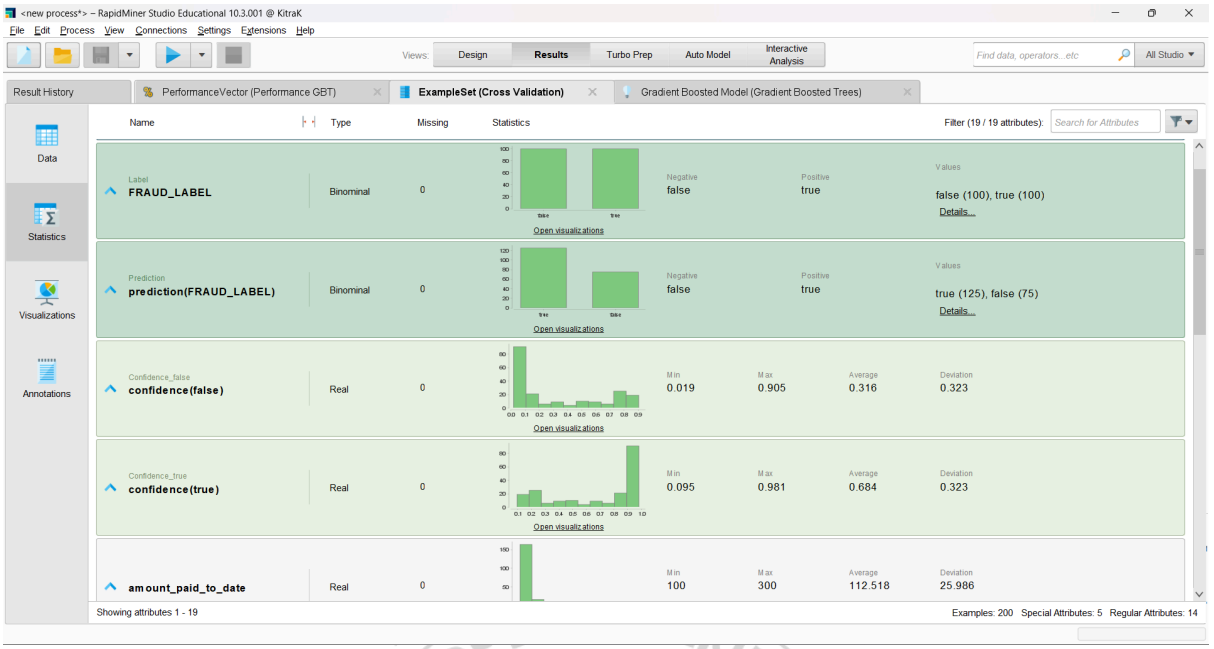
Implementing pattern recognition in cognitive computing involves preparing the data, extracting relevant features, selecting a suitable model, training the model, evaluating its performance, and deploying it in a real-world application.

Implementation :

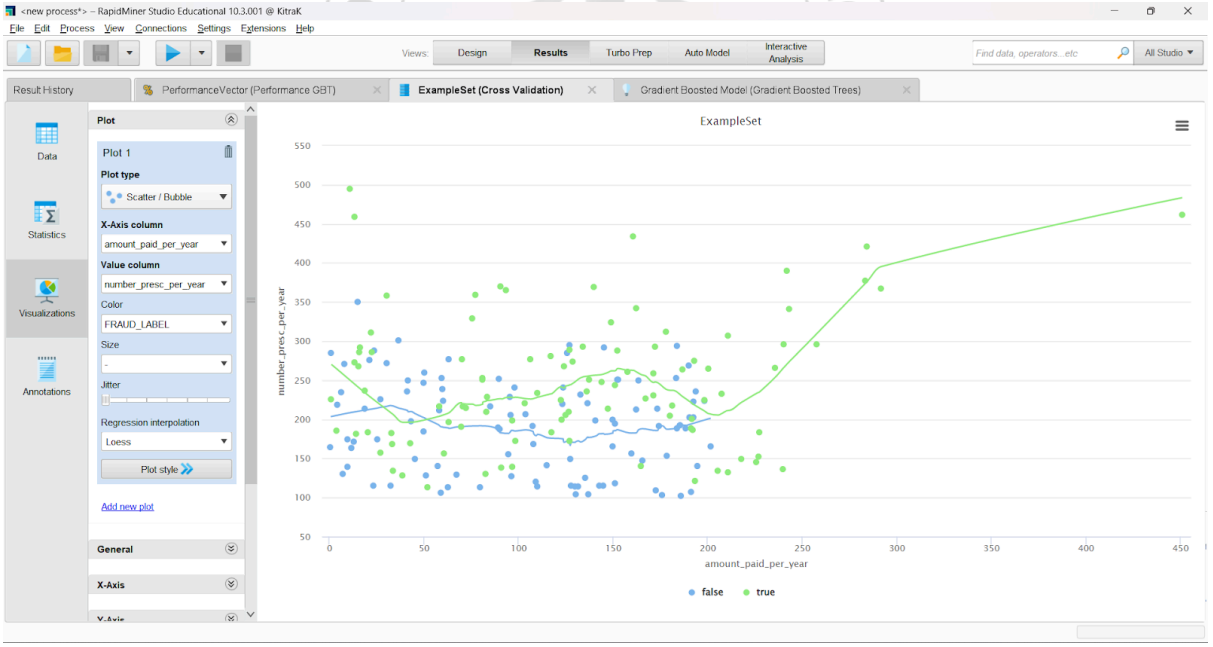
1. **Data Analysis :**



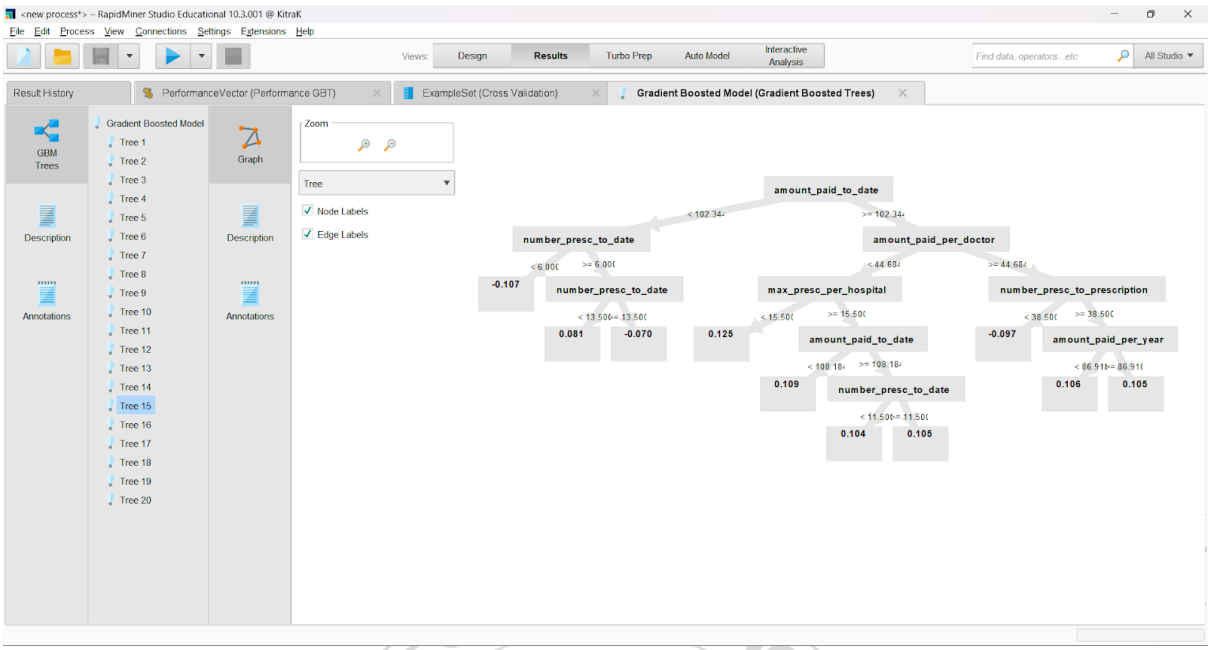
id	FRAUD_LAB...	prediction(F...	confidence(f...	confidence(t...	amount_paid...	number_pre...	max_presc_t...	max_presc_...	max_presc_...	max_presc_...	amount_paid...	amount_paid...	amount_paid...
35	false	false	0.733	0.267	100.403	0	1	1	0	0	159.592	53.969	26.888
226	false	true	0.118	0.882	102.261	0	0	1	4	4	183.867	55.005	28.756
193	false	true	0.040	0.960	104.663	5	0	1	25	32	183.604	41.199	29.052
49	false	false	0.734	0.266	100.153	0	1	1	3	3	103.896	64.625	22.133
145	false	false	0.827	0.173	100.109	17	1	1	16	17	51.092	73.489	47.401
153	false	true	0.048	0.952	106.421	7	0	1	13	14	49.975	34.597	24.278
189	false	false	0.712	0.288	100	0	1	1	0	0	183.950	46.134	20.500
237	false	true	0.054	0.946	107.086	3	0	2	20	45	149.764	74.646	46.757
326	false	true	0.338	0.662	100.667	4	1	1	6	4	123.421	59.122	29.266
334	false	false	0.552	0.448	101.142	8	1	1	0	8	32.206	39.789	27.852
28	true	true	0.035	0.965	170.933	42	0	1	96	85	192.318	114.543	44.892
28	true	true	0.056	0.944	143.636	43	0	1	125	134	83.384	36.142	60.922
28	true	true	0.088	0.912	131.904	46	0	1	162	446	239.691	45.758	51.443
54	true	true	0.050	0.950	119.820	4	0	2	36	12	42.753	82.682	42.586
73	true	true	0.098	0.902	113.366	12	0	1	46	43	0.909	49.282	38.523
73	true	true	0.093	0.907	122.927	11	0	1	46	38	172.026	45.399	57.503
81	true	false	0.692	0.308	100.566	11	0	2	11	11	126.834	56.267	28.447

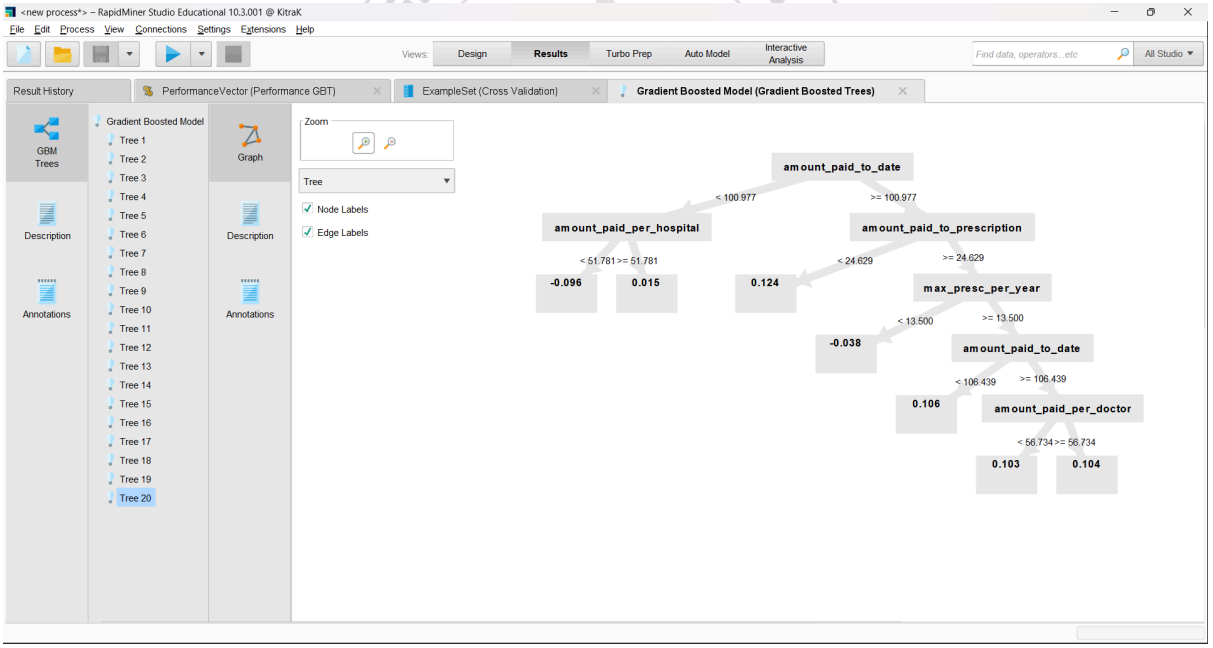


2. Data Modelling :



3. Optimization :

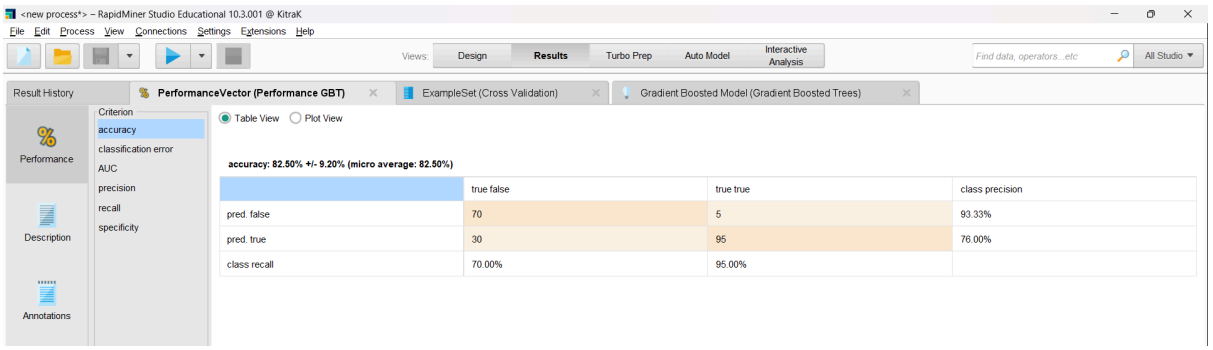


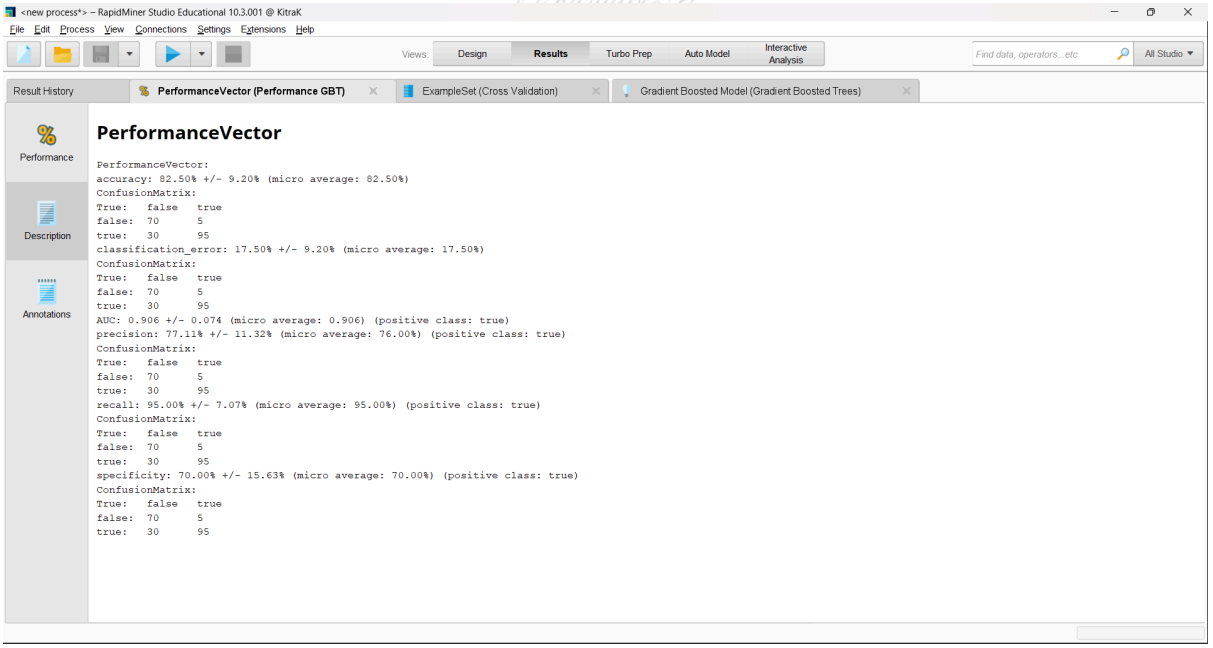


4. Deployment :

In RapidMiner, deploy the trained decision-making model by exporting it to a deployable format and integrating it seamlessly with your cognitive computing system or application for real-time decision support.

Result and Discussion :





Learning Outcomes : Students should have the ability to

LO 1: Formulate the problem using AI and CC Approach.
LO 2: Solve the problem using Pattern Recognition Algorithm.

Course Outcomes :

CO : Analyze Relationship between Big Data and Cognitive Computing.

Conclusion :

Viva Questions :

Q1. What are some common techniques used in pattern recognition, and how do they differ from each other?
Q2. How do you select the appropriate features for a pattern recognition algorithm?
Q3. How do you evaluate the performance of a pattern recognition algorithm?

For Faculty Use

Correction Parameters	Formative Assessment [40%]	Timely completion of Practical [40%]	Attendance / Learning Attitude [20%]	Total
Marks Obtained				