Chaitanya Bharathi Institute of Technology Department of Information Technology

Semester: VI (H2) Academic Year: 2018-19 Subject: Data Mining Lab (16ITC29)

S.No	Week	To include in the record	
1.	10.12.2018 –	Introduction to data mining using Weka and R-Tool	
12.12.2018 i. Write short notes on the below options available WEKA GUI			
• Explorer			
	• Experimenter		
		Knowledge Flow	
		Workbench	
		Simple CLI	
		ii. Preprocessing	
		Attribute Selection	
 Handle Missing Values (labour data set of weka/ or any dataset from keel repository) 			
Nominal to binary			
		Discretisation	
	Normalisation		
		• Standardisation	
		Data Visualisation	
		(Sequence of options that you need to choose to apply a particular filter, description about each filter and the	
		different parameters available with each filter)	
iii. About .arff files and its format iv. Description about any two data sets			
		iv. Description about any two data sets	
		v. http://weka.sourceforge.net/doc.stable/ - write class hierarchy and description about any two filters that you have	
	tried		
R-Tool			
vi. Commands to read.csv file vii. Commands to write a .csv file viii. Data structures: data frame, list, matrices, arrays, slicing of lists ix. List of packages available in R-Tool which supports data mining functionalities			
		· · · · · · · · · · · · · · · · · · ·	
		*Supporting Screenshots are must	

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2.	17.12.2018-	i. Weka.filters.unsupervised.attribute.InterquartileRange			
	19.12.2018	ii. Outlier detection and elimination using weka			
		iii. Data Exploration and Visualization in R			
		(Help from: http://www.rdatamining.com/examples/exploration , Rtool ppt/Gardener text book)			
		Check the dimensionality of the chosen dataset			
		Variable names or column names			
		• Structure			
		• Attributes			
		• Get the first 5 rows			
		• Get the last 6 rows			
		• Get second attributes of the first 10 rows			
		 Distribution of every dimension 			
		 Frequency of each class type 			
		Pie chart			
		Variance of a numeric attribute			
		Covariance of two attributes			
		Correlation of two dimensions			
		Histogram of an attribute			
		• Density			
		Scatter plot			
		Pair Plot			
		Box-Whisker Plots			
	Line charts for both numeric and categorical dimensions				
		Cleveland Dot Charts			
		Bar Charts			
		(Note your observations, Comment on the data distribution, try plotting commands for different kinds of			
	dimensions, try different plotting function options: symbols, size of plotting symbol, legends, x,y-axis labels,				
	titles of graphs, etc)				
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F				
		iv. Start working on a project in Python (Can be using opency, tensorflow, etc) preferably individual projects not		
		in teams		
3.	24.12.2018 -	Generate Association Rules using Apriori and FP Growth algorithms in WEKA		
	26.12.2018	(http://www.rdatamining.com/examples/association-rules)		
		Generate Association Rules using Apriori, ECLAT and FP Growth* algorithms Using R-Tool		
		Convert .csv to .arff and vice versa using R-Tool, WEKA and JAVA API		
		Start working on the project		
		Be ready for viva		
		Get your record with first two week tasks and respective solutions		
		(Try different arguments in R-Tool)		
		* Document mailed		
4.	31.12.2018 -	i. Complete pending programs and work on projects		
	02.01.2019	Make sure that you include comments for R-programs for every single line in the program		
		Try different arguments Write complete syntax with purpose of each argument for the commands in R Complete record		
		vi. Work on your project		
5.	07.01.2019 -	i. Figure out the datasets and decide the task(s)		
	09.01.2019	ii. Write complete syntax with purpose of each argument for the commands in R		
		iii. Complete record		
6.		Classification		
		i. Decision Tree		
		ii. Naïve Bayes		
		iii. Bagging		
		iv. AdaBoost		
		v. Random forest		
7.		vi. vi. K-NN Clustering: (In WEKA as well as R-Tool)		
/.		i. K-Means		
	ii. Hierarchical			
L	1	in monutation		

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	iii. DBSCAN	
8.	Fashion MNIST - Tensorflow	
9.	Build Linear Regression model – Using R-Tool	
10.	Text Mining with R: Twitter Data Analysis	
	Word cloud	
	Sentiment analysis	
11.	Time Series Analysis and Mining	
	Forecasting	
	Clustering	
	Classification	

Resources

- 1. Association Rule Mining
 - a. https://rdrr.io/cran/rCBA/man/fpgrowth.html
 - b. http://r-statistics.co/Association-Mining-With-R.html
 - c. http://www.salemmarafi.com/code/market-basket-analysis-with-r/
 - d. http://rstatistics.net/association-mining-with-r/
 - e. http://www.borgelt.net//fpgrowth.html
- 2. Data Exploration and Visualisation in R
 - a. https://r4ds.had.co.nz/exploratory-data-analysis.html
- 3. Text Mining
 - a. https://rdrr.io/rforge/tm/man/content_transformer.html (S.No#discussed in Class)
 - b. http://dataaspirant.com/2018/03/22/twitter-sentiment-analysis-using-r/ (Sentiment Analysis)
 - c. http://www.rdatamining.com/docs/text-mining-with-r (According to syllabus)
 - d. #http://www.sthda.com/english/wiki/text-mining-and-word-cloud-fundamentals-in-r-5-simple-steps-you-should-know

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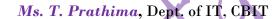
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(Word cloud/Text visualisation)

- 4. Time series Analysis
 - a. http://www.rdatamining.com/docs/time-series-analysis-and-mining-with-r
 - b. https://www.analyticsvidhya.com/blog/2015/12/complete-tutorial-time-series-modeling/
 - c. https://www.analyticsvidhya.com/blog/tag/time-series-analysis/
 - d. https://www.analyticsvidhya.com/blog/2016/02/time-series-forecasting-codes-python/
 - e. https://www.quora.com/How-do-I-learn-about-time-series-analysis-2
 - f. https://towardsdatascience.com/end-to-end-time-series-analysis-and-modelling-8c34f09a3014
 - g. https://towardsdatascience.com/analyzing-time-series-data-in-pandas-be3887fdd621
 - h. https://en.wikipedia.org/wiki/Dynamic_time_warping

5.



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