

Masterclasses software downloads and Zoom link. 16-18 Nov 2021

WEKA: <https://bit.ly/WEKAmasterclass> - offered over 3 days, 16 -18

November 2021, 16h00-18h00

The first hour will be the theory class and the next hour for practicals. Both classes are in sync and participants are encouraged to attend and concentrate in both classes.

Here is the link for the download and installation steps of the software before the class - https://waikato.github.io/weka-wiki/downloading_weka/

3 Days WEKA Training Abridged Course Outline			
Day	THEORY (Tebogo Mokaba)	Day	PRACTICAL (Opeoluwa Iwashokun)
1	Introduction & Installation of WEKA	1	Introduction & Exploratory Data Analysis with WEKA
	Download and Install WEKA: Practical steps to download and install		Load Data and allowed File data types in WEKA: Where and how to load data in
	Explanation of key terms: Mean, Median, Mode, Standard Deviation... in relation to data		Data Understanding and descriptive statistics with WEKA: View data and histogram, outlier, standard deviation...View data and interpret statistical results
	WEKA Menus: Start window and menu options		Perform feature Selection on data: Correlation and feature selection of data
	Introduction to WEKA pre-processing menus -		Manipulate datasets using WEKA command line - Simple CLI Menu Commands
	1) Datasets Types - Explorer >> Preprocessing Menu		
	2) Attribute Selection - Explorer >> Select Attributes Menu		
	2) WEKA Command line - Simple CLI Menu		
2	Machine learning Algorithms with WEKA: Regression and Classification	2	Hands-on Machine Learning Algorithms - Regression and Classification (DEMO
	General explanation of Supervised and Unsupervised Machine Learning		Perform linear Regression model on data - Simple linear regression
	Explanation of key terms: , Confusion matrix, MAE, RMSE, RAE, Accuracy, correlation co-efficients... in relation to data		Hyper-parameter tuning of linear regression
	Methods of classification algorithms in WEKA		Explain results and compare regression performance algorithms for best fit
	Regression Algorithm Explanation - Simple linear regression (Numerical predictor)		Visualize and save result of regression model
	Classification Algorithms Explanation - Logistic regression and decision trees (Categorical predictor)		Perform Classification model on data - Logistic regression and decision trees
	How and when to choose appropriate algorithms		Hyper-parameter tuning of logistic regression algorithms and decision trees algorithms
	Explanation of Hyper-parameters and data visualisation		Explain results and compare regression performance algorithms for best fit
			Visualize and save classification model
3	Machine learning Algorithms with WEKA: Clustering (Supervised) and Association (Unsupervised)	3	Hands-on Machine Learning Algorithms - Clustering (Supervised) and Association (Unsupervised) (DEMO 2)
	Explanation of key terms: Unsupervised data, data clusters, market basket		Perform Clustering model on data - Kmeans
	Methods of clustering and Association algorithms in WEKA		Hyper-parameter tuning of Kmeans Algorithm
	Clustering Algorithm Explanation - KMeans		Explain results and compare KMeans performance algorithm for best fit
	Association Algorithms Explanation - Apriori and Filtered Associator		Visualize and save result of KMeans model
	How and when to choose appropriate algorithms		Perform Association model on data - Apriori and Filtered Associator
	Explanation of Hyper-parameters and data visualisation		Hyper-parameter tuning of Association algorithm and Apriori algorithm
			Explain results and compare algorithms performance for best fit
			Visualize and save model

Data science using R: <https://bit.ly/DataScienceusingR> - offered over 3 days, 16 - 18 November 2021, 16h00 - 18h00

You may use the download links below to download R and r studio

[https://cran.r-project.org/bin/windows/base/R-4.1.2-](https://cran.r-project.org/bin/windows/base/R-4.1.2-win.exe)

[win.exehttps://download1.rstudio.org/desktop/windows/RStudio-2021.09.1-](https://download1.rstudio.org/desktop/windows/RStudio-2021.09.1-372.exe)

[372.exe](https://download1.rstudio.org/desktop/windows/RStudio-2021.09.1-372.exe)

Alternatively, if you do not want to download and install R on your computer, you can sign up and use the RStudio cloud at <https://rstudio.cloud/>

Python: <https://bit.ly/PythonforDS> - offered over 3 days, 16 - 18 November 2021, 16h00 - 18h00

The software that will be used is Thonny which is a Python IDE.

The steps to download and install are as follows:

- 1) Go to <https://thonny.org/>
- 2) Click on the download for the operating system that is being used (Windows for Windows device)
- 3) Run the .exe
- 4) Follow the Installation Wizard and click Next each time
- 5) Thonny will be installed

PowerBI: <https://bit.ly/PowerBIMasterClass> - offered over 3 days, 16 - 18 November 2021, 16h00 - 18h00

For those attending **Power BI**, please register and download Power BI before the session:

Sign up for an account and make sure that you have Power BI installed before the session. Please use student email or work email (com. (Commercial Email) might not work when you signup).

Register: https://app.powerbi.com/signupredirect?pbi_source=web

Install: [Power BI Desktop—Interactive Reports | Microsoft Power BI](#)