

A Virtual Guest Lecture on Principal Component Analysis (PCA)

The UG department of computer science & Applications organized a guest lecture on Principal Component Analysis (PCA) by Dr. CH. SRILATHA Asst.Prof. Dept of CSE, NIT A.P on 31st December, 2021 @ 10:00 A.M for Final Year students of B.CA. She started his lecture by demonstrating Principal Component Analysis, or PCA, is a dimensionality-reduction method that is often used to reduce the dimensionality of large data sets, by transforming a large set of variables into a smaller one that still contains most of the information in the large set.

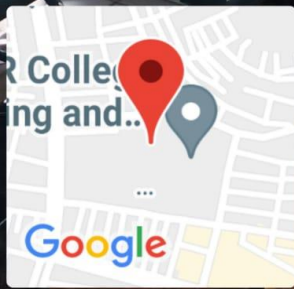
Objectives:

- PCA helps in Dimensionality reduction. Converts set of correlated variables to non-correlated variables.
- It finds a sequence of linear combinations of variables.
- PCA also serves as a tool for better data visualization of high dimensional data. We can create a heat map to show the correlation between each component.
- It is often used to help in dealing with multi- collinearity before a model is developed.
- It describes that data is a good story teller of its own.

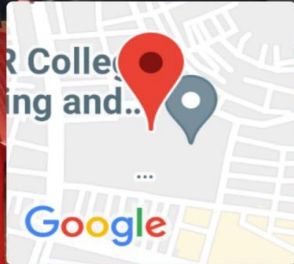
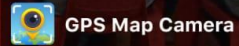
Outcomes:

- To interpret the PCA result, first of all, you must explain the scree plot. From the scree plot, you can get the eigenvalue & %cumulative of your data.
- The eigenvalue which >1 will be used for rotation due to sometimes; the PCs produced by PCA are not interpreted well.
- Eigenvalues >1.0 were considered as significant and subsequently varimax factors (VFs), which are the new groups of variables are generated.
- The VFs values which are greater than 0.75 (> 0.75) is considered as “strong”, the values range from 0.50-0.75 ($0.50 \geq \text{factor loading} \geq 0.75$) is considered as “moderate”, and
- The values range from 0.30-0.49 ($0.30 \geq \text{factor loading} \geq 0.49$) is considered as “weak” factor loadings.

In the conclusion, she explained the importance of setting a goal and choosing the career best.



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Dr. CHEBROLU. SRILATHA Asst.Prof. Dept of CSE, NIT A.P