

CISC5352 Artificial
Intelligence in Fintech Quiz
(3)

A) Rank HFT data using PCA¹ (20 points)

- Add at least 4 variables to the HFT datasets in Quiz 2. One variable should be Bolling band
- Do dimension reductions for the HFT data
- Rank the importance of all variables
- Rank the importance of the observations
- Can you rank features/observaions using t-SNE, why?

¹You need to go through our class codes

A) Vehicle data PCA analysis (20 points)

- Write a python program to conduct the same analysis as we did in R for the vehicle data in our lecture
- You need to use ALL variables rather than only 11 variables we used.
 - PCA biplot (no dot-based biplot)
 - t-SNE biplot
 - PCA triplot
 - Rank top 20 outliers using PCA and give a reason.
 - Can you use t-SNE to rank outliers? why?

C) Implement PCA by using SVD, then do PCA analysis for your own finance data (10 points)

- Do PCA analysis for your own finance data

What should you turn in?

- 1. A folder that contains
 - A ppt to show details of your analytics (at MOST 30 pages)
 - your data
 - source files
 - corresponding related output.
- 2. Send the zipped file (.zip instead of ,rar) of your folder to Blackboard before the DUE