

Python_Lesson6: Python Programming

Please don't forget to submit your feedback after the class. This helps a lot in increasing effectiveness of the course. Use the following link to submit your feedback: https://docs.google.com/forms/d/1AkrJ-5ZHozJf_mCg92hsXAEMYKzo3CaM4ebm0GJSmU/edit?ts=5b74fe0e

Lesson Overview:

In this lesson, we will focus on clustering techniques
Clustering using KMeans

Use Case Description:

1. KMeans Clustering

Programming elements:

KMeans Clustering and Data Analysis

Source Code:

<https://umkc.box.com/s/pgqpapgr12wyuj63sgs3162wztpe3q77>

In class programming:

1. Apply K means clustering in this data set provided below:
<https://umkc.box.com/s/a9lzu9qoqfkbhjwk5nz9m6dyybhl1wqy>
 - Remove any null values by the mean.
 - Use the elbow method to find a good number of clusters with the KMeans algorithm
2. Calculate the silhouette score for the above clustering
3. Apply PCA on the same dataset.

Data Description can be found in <https://umkc.box.com/s/okcxw829g3m5efkljbtwpof23bmvnw>

*** Bonus points

Apply kmeans algorithm on the PCA result and report your observation if the score improved or not?

ICP Submission Guidelines

(for In Class students):

1. ICP Submission is in pairs of two students.
2. Once completed, must be presented to TA or Instructor before the completion of the class
3. Submission after class is considered as a late submission. (Check the late submission policy in the syllabus)
4. ICP Code with brief explanation should be pushed to GitHub. Submit GitHub link through the Feedback Form:
<https://goo.gl/forms/HEJyYaiUi3MKXKP22>

Online Submission Guidelines (for Online students):

1. Submit your source code and documentation to GitHub and represent the work through wiki page properly (submit your screenshots as well. The screenshot should have both the code and the output)
2. Comment your code appropriately
3. Video Submission (2 – 3 min video showing the demo of the ICP, with a brief voice over on the code explanation)
4. Submission after class is considered as a late submission. (Check the late submission policy in the syllabus)
5. Use the following Google link to submit your ICP # (GitHub wiki page link for ICP #):
https://docs.google.com/forms/d/1AkrJ-5ZHozJf_mCg92hsXAEMYKzo3CaM4ebm0GJSmU/edit?ts=5b74fe0e

Evaluation Criteria:

1. Completeness of Features
2. Code Quality (https://en.wikipedia.org/wiki/Best_coding_practices)
3. Time
4. Feedback Submission

Note: *Cheating, plagiarism, disruptive behavior and other forms of unacceptable conduct are subject to strong sanctions in accordance with university policy. See detailed description of university policy at the following URL: <https://catalog.umkc.edu/special-notice/academic-honesty/>*