**DeepLearning\_Lesson1: Basics in Keras**

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/e/1FAIpQLSfiFzWZD7Ljeu8xK4iiL6CYZR4j3VYkwD1bfh-nW37lsPPfmw/viewform>

**Lesson Overview:**

In this lesson, we are going to have an introduction to Deep Learning programming on Keras. Before to that, we will introduce some of the applications of the Deep Learning in the area of vision and NLP.

**Use Case Description:**

Predicting the diabetes disease

**Programming elements:**

Keras Basics

**Source Code:**

<https://umkc.box.com/s/3cvfiwc81lhgygc67deyeqs8m858lld0>

**In class programming:**

1. Use the use case in the class:
   1. Add more Dense layers to the existing code and check how the accuracy changes.
2. Change the data source to Breast Cancer dataset \* available in the source folder and make required changes
3. Normalize the data before feeding the data to the model and check how the normalization change your accuracy (code given below).

from sklearn.preprocessing import StandardScaler

sc = StandardScaler()

Breast Cancer dataset is designated to predict if a patient has Malignant (M) or Benign = B cancer

**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://docs.google.com/forms/d/e/1FAIpQLSdmJkDgBMxr4qv73c9y5k1jtky44-sMmOI1v1jFtNEbUJ6H9A/viewform>

**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 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/e/1FAIpQLSfiFzWZD7Ljeu8xK4iiL6CYZR4j3VYkwD1bfh-nW37lsPPfmw/viewform>

**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-notices/academic-honesty/*](https://catalog.umkc.edu/special-notices/academic-honesty/)