Final Project – Approaching any ML/DL project

Value: 1**5%**
Date of Project Group Presentation: 10 or 11 August, during our class hours
Date of Submitting all necessary Document: 11 August, 11.59 PM
Max Size of Group: 3

Project Objective:

The objective of the project is to demonstrate the personal abilities and skills required to produce and present an extended piece of work/idea in the field of Artificial Intelligence. Through the project, students are expected to engage in personal inquiry, action and reflection on specific topics and issues to solve a real-world problem. Students build self-confidence, demonstrate independence, and develop professionalism by successfully completing the project.

By completion of the project students will become proficient in building a complete end-to-end machine learning model from loading the data to making predictions.

Instruction:

1. Build an end-to-end project on the dataset selected. [Note: The list of datasets was already provided in the Final Project Ideation document and students should have already submitted the ideation report in which they indicated their chosen dataset.]
2. End-to-End machine learning is concerned with collecting your data, preparing your dataset, training a model on it, and then deploying that model. Below Figure 1, gives a good idea of what an AI workload pipeline looks like.
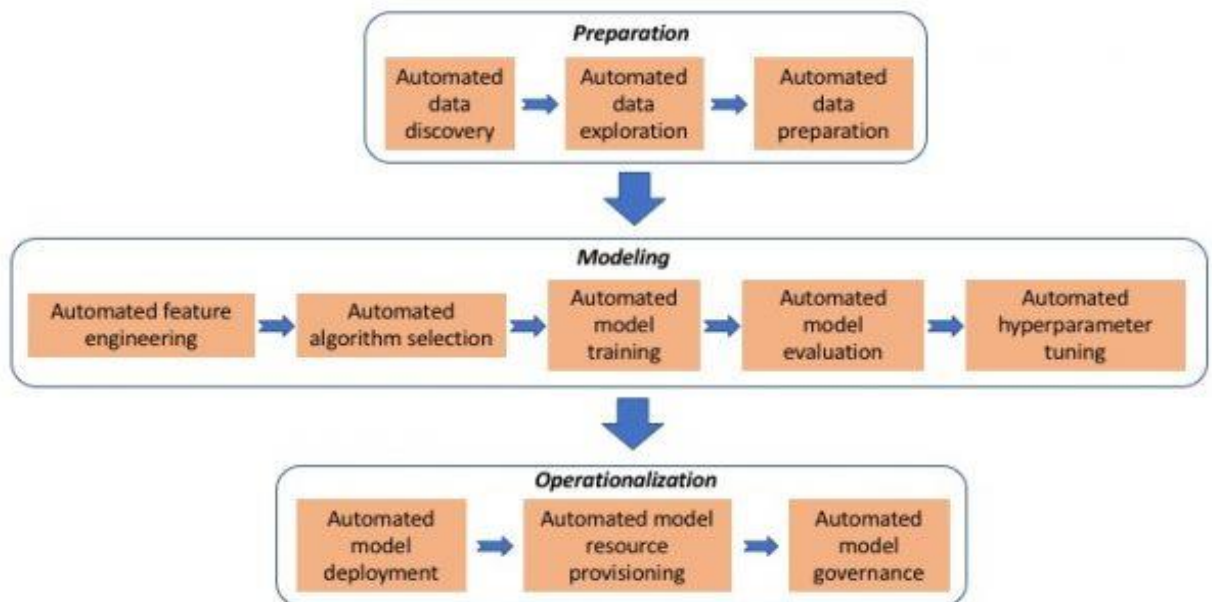

Figure 1: AI workload pipeline

3. Visualization is an integral part of any ML/DL project. Include necessary visualization in any of the stages of the above pipeline to highlight some of the rich interactions between data visualization and artificial intelligence.
4. Incorporate Agile Scrum philosophy into your final project.
5. Use GitHub for project collaboration and maintain a reproducible GitHub repo.
6. Your solution should be deployed (in any cloud service provider of your choice) in such way that users can interact with your model and make inferencing.
7. To develop your solution, you need to write standard code following PEP8 style guidelines.
8. Your final project will be graded on overall solution pipeline you develop.

Required Submissions: (Group Submission)
1. Each group should submit a final project report with approximately 8 pages.
2. Each group should submit all the necessary jupyter notebook files of the code.
3. Each group should submit a screen recording of their deployed model in action.
4. The GitHub link of the repository for the final project.
5. The URL of the deployed model through which I can make predictions on new data points.

Required Submissions: (Individual Submission)
6. Each member of the group should submit a peer evaluation form.

Project Group Presentation
7. Every group should make a 10 minutes presentation on 10 or 11 August during our class hours.
8. Presentation will be followed by a 5-7 minutes Q&A section.

Rubrics:
1. The group have made a presentation of the final project with presentation time equally divided among group members.
2. All submitted code are complete and error free. If any error, your group work will be graded to zero.
3. Does the project give the expected result?
4. All code should be well commented and readable.
5. Has the group submitted all the files and individual members submitted the peer evaluation form?

This assignment relates to the following Course Learning Outcomes:
CLO-1: Assess and evaluate importance of AI in various enterprise settings and develop strategies for developing enterprise AI solutions
CLO-2: Write industry standard code and use git to work in agile environment for developing enterprise AI products
CLO-3: Collect data, conduct research, develop and evaluate models for developing enterprise AI solutions
CLO-4: Perform various analysis using enterprise cloud solutions such as AWS, Google and Azure Cloud services

CLO-5: Perform various DevOps operations (e.g., pytest) using various local and cloud technologies and Develops Flask API

CLO-6: Develop and deploy Enterprise AI solution pipeline using various technologies (i.e., Local, Dockers, Heroku or cloud)