CAE Research Project Meeting Minutes

5/26/2021

- Participants
    - Dr. Waleed Farag (PI)
    - Dr. Soundararajan Ezekiel (Co-PI)
    - Dr. Xin-Wen Wu (Co-PI)
    - Cassandra Lefever
    - Maria Balega
    - Alicia Deak
    - Alex Robbins
- Meeting started at 12:00 p.m.
- Unanimously approved minutes for meeting on May 19, 2021
- Main Points
    - NCC Workshop
        - June 1st and 2nd 8:45 a.m. – 3 p.m.
        - See email from Dr. Farag for details
    - Discussed:
        - Alicia – Update from research facility in Rome, NY
            - Anomaly detection based on machine learning, broken down into different algorithms
                - SVM, DCNN, GAN, autoencoder, etc.
            - Using data from satellites for the research - https://www.celestrak.com/NORAD/elements/
            - Currently in the preprocessing stage, having trouble because the dataset is unique (two lines, 14 groupings, nothing is labeled)
            - Getting help from Adam
        - Malcom –
            - Will be back from vacation on Monday night
            - Worked with Alicia to get the basis of the SVM code and its RBF function
        - Alex and Cassie –
            - Worked on DCNN, input data is ready, getting an error in the function
        - Maria – Extreme Gradient Boosting, notes and an example program on the Titan using sample Iris dataset

    - Tasks:
        - Alicia –
            - Help teach SVM and GAN to Cassie, Maria, and Malcom after a model is built
        - Malcom –
            - Will continue to work with Alicia
        - Alex and Cassie –
            - Work with Alicia and Adam to troubleshoot the error in the DCNN

- Maria –
  - Work on getting a portion of the IoT23 dataset running in the xgboost code to see if it can work, then gradually try more of the dataset
- Adjournment at 1:10 p.m.
- Next meeting will be tentatively held on Wednesday June 2nd at 5 p.m. via Dr. Farag's Zoom room