**Course:** Data Science Practicum – MSDS 692

**Name:** Francesca Beller

**Week:** 7

**Project Title:** Python Classification of NFL Plays Using *Keras*

**Project Summary:** The purpose of this project will be to create a supervised machine learning model that will be able to take in video input of NFL plays and classify them as either a pass or a run.  The model will be trained using input videos of pass and run plays scraped from the web. A mapping file will be manually created to assign binary classification to the individual frames of each video play, mapping the frame to either a 0 for run or a 1 for pass.

**Milestones:**

Researching the problem - DONE

Obtaining the data – DONE

Splitting videos into frames - DONE

Creating mapping CSV – DONE

Image mapping in Python - DONE

Image pre-processing - DONE

Model Training - DONE

Model Building - DONE

Model Evaluation - DONE

Model Re-tuning - DONE

Model Evaluation (continued) - DONE

Presentation Preparation

**Proposed to Do from Last Week:** Last week’s focus was on building, compiling, and training the initial model, as well as fitting it to a validation set created from the original training video set.

**This Week’s Progress:** This week, more videos were pulled for re-training the model, and the new iteration of the model was built and tested. Using 20 pass and 20 run play videos to train this iteration of the model, it was able to achieve a 70% success rate when classifying a new set of test videos.

**Issues and Discussion:** None this week

**To Do:** Presentation preparation

**GitHub Repository:** https://github.com/francescabeller/MSDS-692-Practicum