

1. **OVERVIEW:** The nonprofit foundation Alphabet Soup wants a tool that can help it select the applicants for funding with the best chance of success in their ventures. With your knowledge of machine learning and neural networks, you'll use the features in the provided dataset to create a binary classifier that can predict whether applicants will be successful if funded by Alphabet Soup.

2. **RESULTS:**

- **Data Preprocessing**

- What variable(s) are the target(s) for your model?
 - The target variable is the 'IS_SUCCESSFUL' column from application_df
- What variable(s) are the features for your model?
 - The feature variables are every other column from application_df- seen by dropping the column 'IS_SUCCESSFUL'
- What variable(s) should be removed from the input data because they are neither targets nor features?
 - Both 'EIN' and 'NAME' columns were dropped for this reason

- **Compiling, Training, and Evaluating the Model**

- How many neurons, layers, and activation functions did you select for your neural network model, and why?

- I started with 10 hidden_nodes_1 (1 layer) and 6 hidden_nodes_2 (2 layers). These were randomly picked, since they could be changed and (theoretically) improved in additional attempts.
- Were you able to achieve the target model performance?
 - No - I was not able to achieve the 75% model accuracy target
- What steps did you take in your attempts to increase model performance?
 - I added more layers, added additional hidden nodes, and changed the total epochs in an attempt to achieve higher model accuracy.

3. **SUMMARY:** The deep learning model achieved an approximate accuracy of 73% and data loss of 56%. One improvement could be realized through more extensive data preprocessing and employing models with different activation functions. Iterative refinement of the model should continue until higher accuracy levels are achieved.