

	Mastery	Activities to Review / Comments
Data Preprocessing	<p>30 to >27.0 pts</p> <p>The Deliverable Fulfills "Approaching Mastery" Required Criteria and meets this requirement:</p> <ul style="list-style-type: none"> ✓The EIN and NAME columns have been dropped. ✓Columns with more than 10 unique values have been grouped together. ✓The categorical variables have been encoded using <code>get_dummies</code>. ✓The preprocessed data is split into training and testing datasets. ✓The numerical values have been standardized using the <code>StandardScaler</code>. 	<p>Follow the preprocessing steps as outlined (Step 1).</p> <p>Most of it is pandas manipulations of your dataframe</p> <p><code>get_dummies</code>: Review 19.2.4 on and previous two homeworks</p> <p>data splitting and scaling has been covered in week 19, and we have been doing this in every activity in week 20 and this week 21</p> <p>Make sure to think about aggregating rare categories into "Other" first, and then applying the <code>StandardScaler</code> transformation to your training and test data.</p>
Compile, Train, and Evaluate the Model	<p>20 to >19.0 pts</p> <p>The Deliverable Fulfills "Progressing" Required Criteria and meets these requirements:</p> <ul style="list-style-type: none"> ✓The number of layers, number of neurons per layer, and activation function are defined. ✓An output layer with an activation function is created. ✓There is an output of the model's loss and accuracy. ✓The results are saved to an HDF5 file. 	<p>Review any activity in this week 21 except 21.1.1 for an example of creating, adding layers, compiling, training and evaluating a neural network model.</p> <p>Make sure there is an output layer</p> <p>Make sure to run and save the notebook with the output of the epochs</p> <p>Make sure you get the file output with no errors!</p> <p>Don't forget to save the HDF5 file. See https://www.tensorflow.org/guide/keras/save_and_serialize</p>

<p>Model Optimization</p>	<p>20 to >17.0 pts</p> <p>Student produces model that demonstrates predictive accuracy over 75%. OR The student's solution contains working code that attempts to increase model performance at least THREE times using the following steps: ✓Noisy variables are removed from features. ✓Additional neurons are added to the hidden layers. ✓Additional hidden layers are added. ✓The activation function of hidden layers or output layers are changed for optimization. AND: ✓The results are saved to an HDF5 file.</p>	<p>This can be separated into a new notebook (AlphabetSoupCharity_Optimization.ipynb) to keep it organized, and show what steps you took to optimize.</p> <p>Make sure to explain the steps you took and why to optimize your model. Try adding layers, different activation functions, etc. until you get over 75%. Think about any features or observations you could drop or clean further to help with the performance.</p> <p>Don't forget to save the HDF5 file. See https://www.tensorflow.org/guide/keras/save_and_serialize</p>
<p>Report: Structure, Organization, and Formatting</p>	<p>6 to >5.0 pts</p> <p>The written analysis has ALL of the following: ✓There is a title, and there are multiple sections. ✓Each section has a heading and subheading. ✓The images are formatted and displayed correctly.</p>	<p>Write your report in the notebook in Markdown format.</p>
<p>Report: Analysis</p>	<p>24 to >21.0 pts</p> <p>✓The purpose is well defined. ✓ALL SIX questions are answered. ✓The results are summarized, and there is a</p>	<p>Consider fitting the data to the different model you are suggesting and show the accuracy is good. Make sure to justify why this different model would perform well for this dataset.</p>

	recommendation on using a different model to solve the classification problem, with a justification.	
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