Neural Network Report

By Thomas Yang

The construction of the neural network model to determine if an employee is interested in changing jobs was an interesting and informational experience, and confusing. The model I designed has two hidden layers, each layer with a hundred and twenty-eight neurons. The data was broken into three sets: training, validation, and testing. The training set was trained in batches of sixty-four, validation was done in batches of thirty-two, testing was done in batches of one hundred and twenty-eight. The model has an optimizer, loss function, and metrics that are used in the neural network. The optimizer implants different algorithm that a person can use in their neural network, the one I am using is adam. The loss function is used to calculate loss in the neural network, the loss function I am using is Sparse Categorical Cross Entropy. The last component is the metrics which is used to calculate certain events, the one I am using is accuracy which calculates how often my predictions equal the labels. Now to talk about the outputs, the accuracy I got from my training and validation was between seventy-five to seventy-seven percent. When it came to testing the data set it would have an accuracy of around seventy-six to seventy-seven, which is pretty good since the cap is about seventy-eight. There was definitely more that I wanted to do like dropping other columns that could not be needed to see how that affects the data or trying out other optimizer or loss functions to see how that affects the accuracy of the neural network. I feel like I accomplished a lot while working on this, but I know I am just scratching the surface of this field.