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**Road Map to Prediction**

**Exploring and Processing the Data**

* Read in the CSV (comma separated values) file and convert them to arrays. Arrays are a data format that our algorithm can process.
* Split our data-set into the input features (which we call x) and the label (which we call y).
* Scale the data (we call this *normalization*) so that the input features have similar orders of magnitude.
* Split our data-set into the training set, the validation set and the test set.

**Building and Training our First Neural Network**

**Divided into two steps**

**Setting up the Architecture & Filling in the best numbers**

* We specify the architecture with the Keras Sequential model.
* We specify some of our settings (optimizer, loss function, metrics to track) with *model.compile.*
* We train our model (find the best parameters for our architecture) with the training data with *model.fit.*
* We evaluate our model on the test set with *model.evaluate*

**Visualizing Loss and Accuracy**

We use *matplotlib*to visualize the training and validation loss / accuracy over time to see if there’s overfitting in our model.

**Adding Regularization to our Neural Network**

To deal with overfitting, we can code in the following strategies into our model each with about one line of code:

* L2 Regularization
* Dropout

**Consolidated Summary**

* Explore and Process the Data
* Build and Train our Neural Network
* Visualize Loss and Accuracy
* Add Regularization to our Neural Network