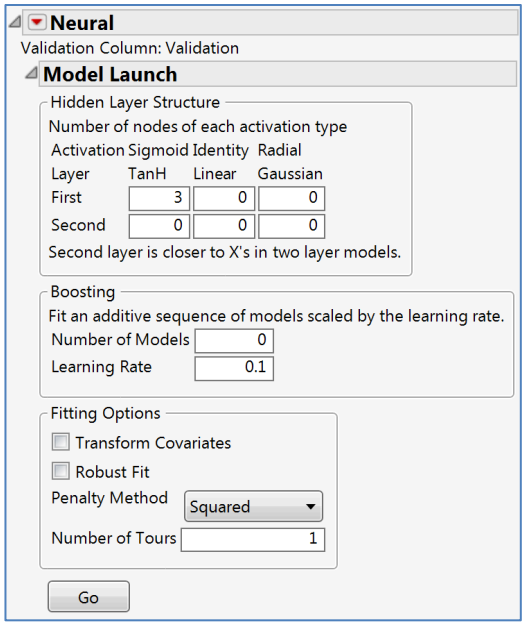
Neural Networks

Use to create neural networks, which are flexible predictive models based on a layering of hidden activation functions.

Neural Networks

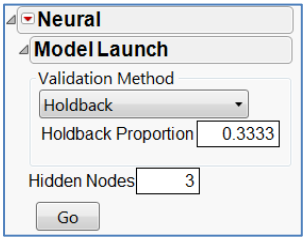
Diamonds Data.jmp (Help > Sample Data Library)



1. From an open JMP® data table, select **Analyze > Predictive Modeling > Neural.**
2. Select a response variable from **Select Columns** and click **Y, Response**.
3. Select explanatory variable(s) from **Select Columns** and click **X, Factor**.
4. If desired, select the validation column and click Validation (**JMP Pro only**). Note that if a validation column is not specified, options for validation will be provided within the Model Launch dialog.
5. In the resulting Model Launch window:

   In JMP Pro:

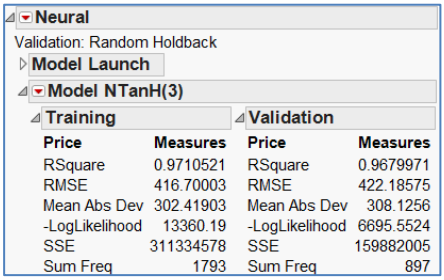
   - Specify the **hidden layer structure** by entering the number of TanH, Linear and Gaussian functions to use in each layer.
   - If using **boosting**, specify the number of models and the learning rate.
   - Select the desired **fitting options**, and click **Go.**



   In JMP:

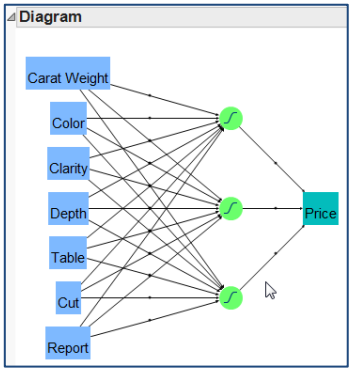
   - Select the **validation** method (Excluded Rows Holdback, Holdback, KFold).
   - Specify the **Holdback Proportion** or the number of **Folds**.
   - Specify the number of **Hidden Nodes**, and click **Go.**

   JMP and JMP Pro will generate fit statistics for both the training and validation data. For categorical responses, a **Confusion matrix** and **Confusion Rates matrix** are also generated.



Tips:

- Use red triangle options (for the model) to view estimates, save formulas, display model profilers, or display the neural diagram (shown right). The profilers are particularly useful for visualizing models.
- To view a saved formula: In the **column panel** of the data table, click the **plus sign** next to the name of the desired hidden layer.



Note: For more information on fitting and evaluating neural networks, see the book ***Specialized Models*** book (under **Help > Books**) or search for "neural networks" in the JMP Help.