

Pricing Diamonds

Fit Model - JMP Pro

Model Specification

Select Columns

11 Columns

- Carat Weight
- Color
- Clarity
- Depth
- Table
- Cut
- Report
- Price
- Validation
- Default NTanH(3) Predicted Price
- NTanH(3) NLinear(3) N...ussian(3) Predicted Price

Pick Role Variables

Y: Price (optional)

Weight: optional numeric

Freq: optional numeric

Validation: Validation

By: optional

Construct Model Effects

Add

Cross

Nest

Macros

Degree: 2

Attributes

Transform

No Intercept

Personality: Standard Least Squares

Emphasis: Minimal Report

Help

Run

Recall

Remove

☐ Keep dialog open

Pricing Diamonds

Diamonds Data - Fit Least Squares - JMP Pro

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Response Price

Parameter Estimates

Term	Estimate	Std Error	t Ratio	Prob> t
Intercept	-2266.178	884.4998	-2.56	0.0105*
Carat Weight	8708.2899	70.01691	124.37	<.0001*
Color[K]	-2090.25	71.86436	-29.09	<.0001*
Color[J]	-1181.708	52.45186	-22.53	<.0001*
Color[I]	-421.4821	49.11736	-8.58	<.0001*
Color[H]	175.34043	42.77765	4.10	<.0001*
Color[G]	718.57176	43.41345	16.55	<.0001*
Color[F]	851.19525	42.70225	19.93	<.0001*
Color[E]	876.80111	42.48098	20.64	<.0001*
Clarity[SI2]	-1441.973	41.3274	-34.89	<.0001*
Clarity[SI1]	-785.5112	37.40715	-21.00	<.0001*
Clarity[VS2]	-84.6066	41.48143	-2.04	0.0416*
Clarity[VS1]	345.5396	42.67996	8.10	<.0001*
Clarity[VVS2]	476.61469	49.98375	9.54	<.0001*
Clarity[VVS1]	618.21077	53.58889	11.54	<.0001*
Depth	-22.23206	14.29425	-1.56	0.1201
Cut[Good]	-285.9425	56.1001	-5.10	<.0001*
Cut[Very Good]	-55.83863	33.11297	-1.69	0.0919
Cut[Excellent]	72.087022	31.38436	2.30	0.0218*

Effect Tests

Crossvalidation

Source	RSquare	RASE	Freq
Training Set	0.9160	687.27	1614
Validation Set	0.9185	643.29	538
Test Set	0.9147	788.39	538

Pricing Diamonds

Neural - JMP Pro

Predicts one or more response variables using a flexible function of the input variables.

Select Columns

12 Columns

- Carat Weight
- Color
- Clarity
- Depth
- Table
- Cut
- Report
- Price
- Validation

☐ Informative Missing

Set Random Seed

Cast Selected Columns into Roles

Y, Response

X, Factor

Freq

Validation

By

Action

OK

Cancel

Remove

Recall

Help

Diamonds Data - Neural of Price - JMP Pro

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View Window Help

Neural

Validation Column: Validation

Model Launch

Hidden Layer Structure

Number of nodes of each activation type

Activation Sigmoid Identity Radial

Layer	TanH	Linear	Gaussian
First	<input type="text" value="3"/>	<input type="text" value="0"/>	<input type="text" value="0"/>
Second	<input type="text" value="0"/>	<input type="text" value="0"/>	<input type="text" value="0"/>

Second layer is closer to X's in two layer models.

Boosting

Fit an additive sequence of models scaled by the learning rate.

Number of Models

Learning Rate

Fitting Options

☐ Transform Covariates

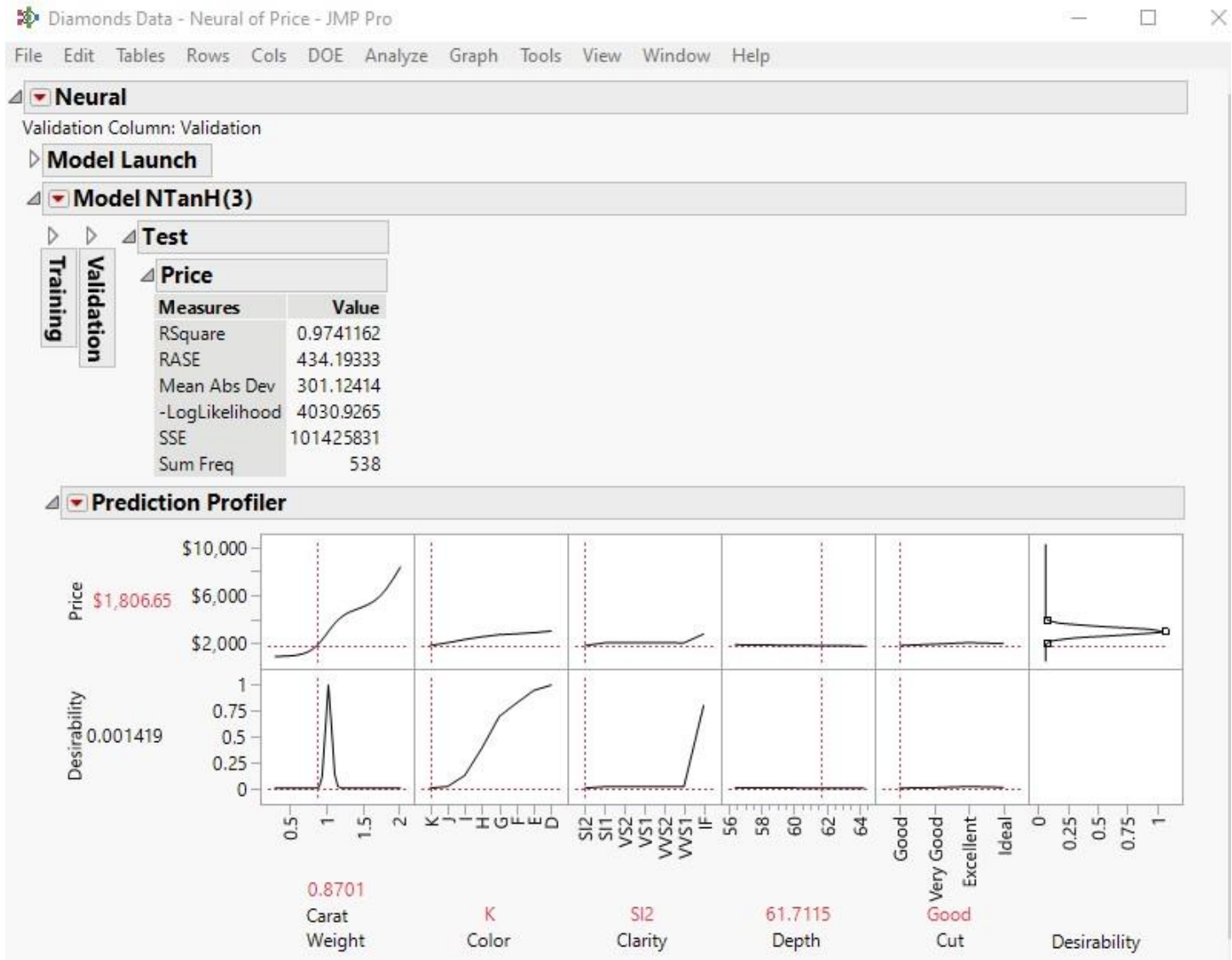
☐ Robust Fit

Penalty Method

Number of Tours

Go

Pricing Diamonds



Pricing Diamonds

Diamonds Data - Neural of Price - JMP Pro

File Edit Tables Rows Cols DOE Analyze Graph Tools View Window Help

Neural

Validation Column: Validation

Model Launch

Hidden Layer Structure

Number of nodes of each activation type

Activation Sigmoid Identity Radial

Layer	TanH	Linear	Gaussian
First	3	3	3
Second	3	3	3

Second layer is closer to X's in two layer models.

Boosting

Fit an additive sequence of models scaled by the learning rate.

Number of Models 0

Learning Rate 0.1

Fitting Options

☐ Transform Covariates

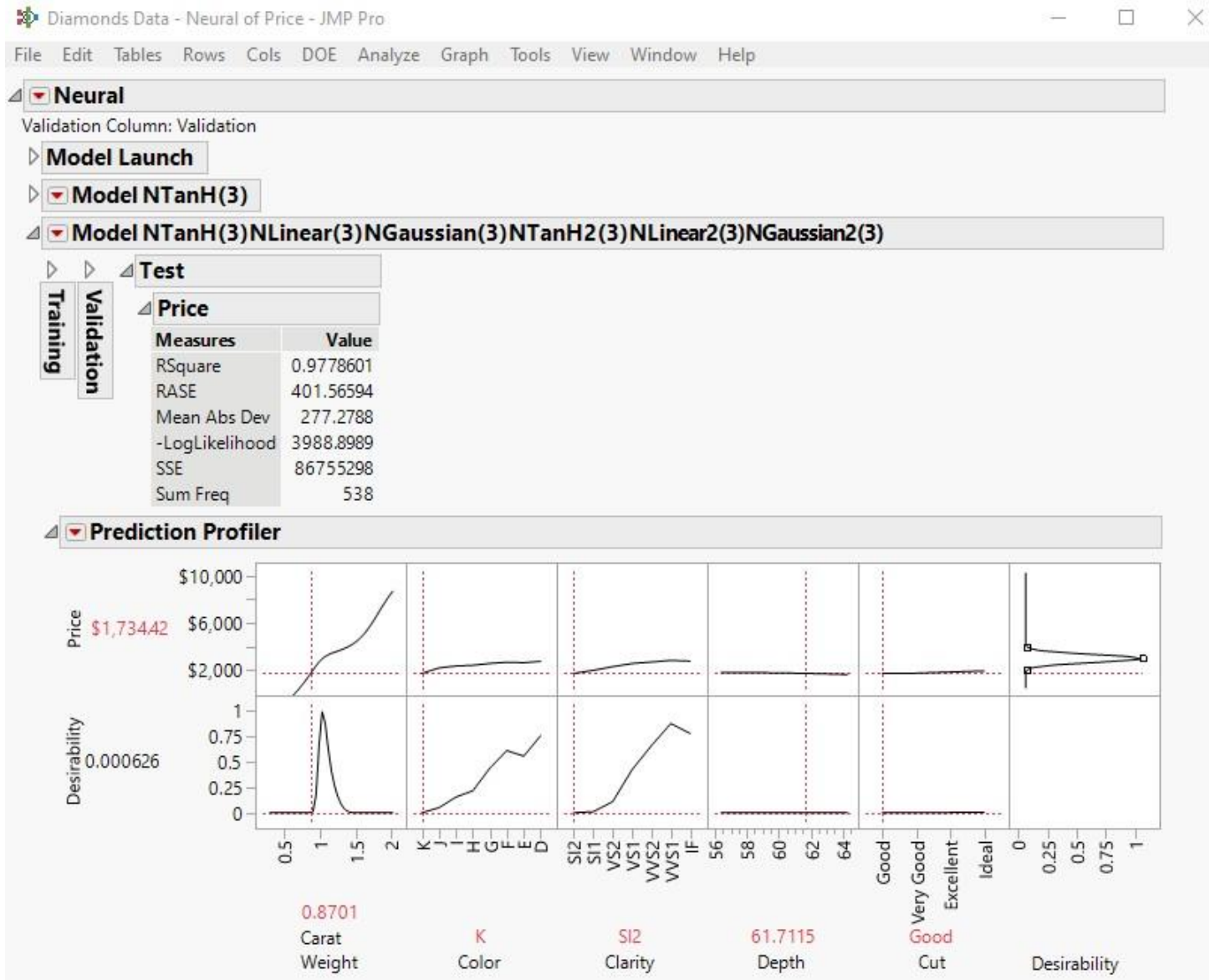
☐ Robust Fit

Penalty Method Squared

Number of Tours 20

Go

Pricing Diamonds



Pricing Diamonds

Diamonds Data - Model Comparison - JMP Pro

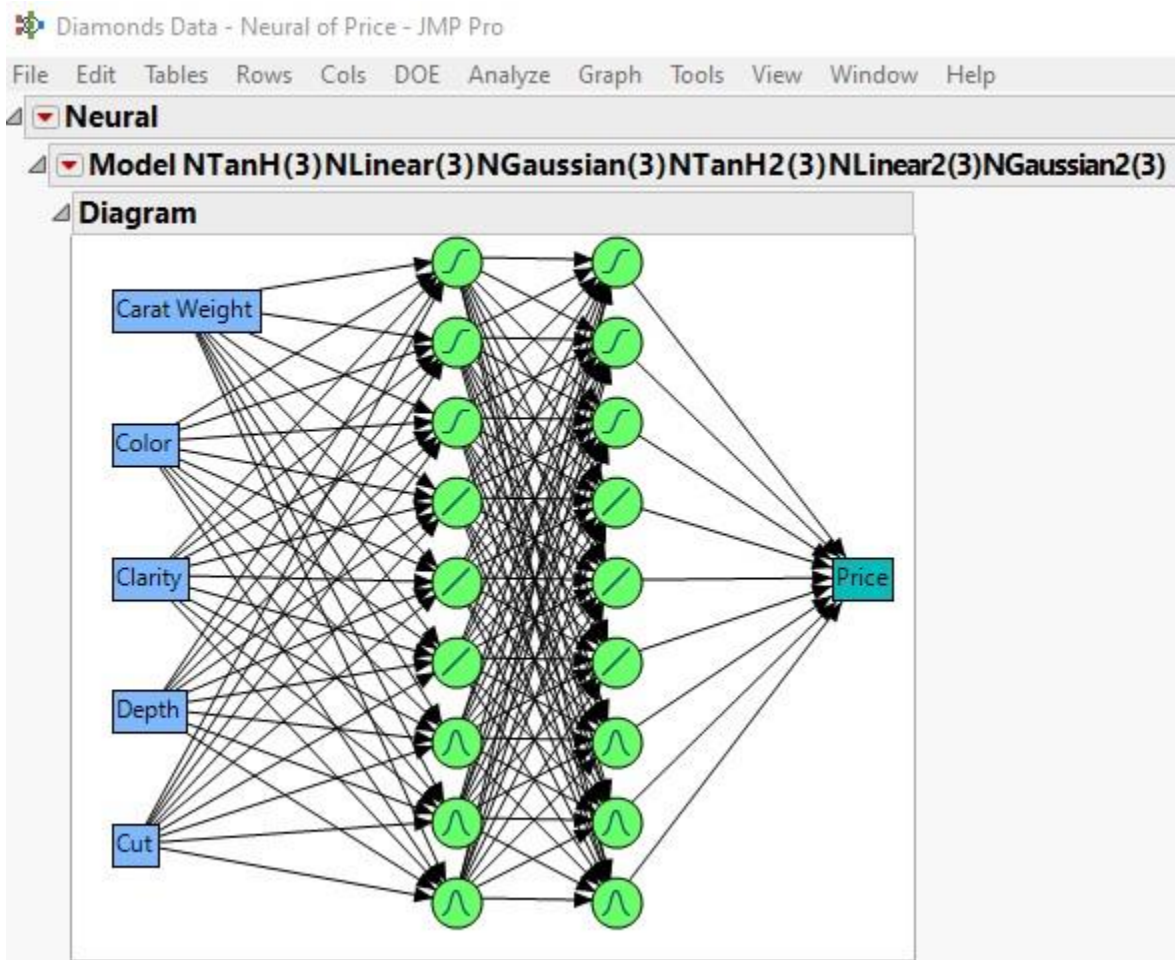
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Model Comparison

Predictors

Measures of Fit for Price

Validation	Predictor	Creator	.2 .4 .6 .8	RSquare	RASE	AAE	Freq
Training	OLS Predicted Price	Fit Least Squares		0.9160	687.27	497.06	1614
Training	Default NTanH(3) Predicted Price	Neural		0.9713	401.79	287.30	1614
Training	NTanH(3) NLinear(3) NGaussuan(3) NLinear2(3) NGaussian(3) Predicted Price	Neural		0.9807	329.45	236.84	1614
Validation	OLS Predicted Price	Fit Least Squares		0.9185	643.29	484.61	538
Validation	Default NTanH(3) Predicted Price	Neural		0.9676	405.50	300.44	538
Validation	NTanH(3) NLinear(3) NGaussuan(3) NLinear2(3) NGaussian(3) Predicted Price	Neural		0.9761	348.28	259.73	538
Test	OLS Predicted Price	Fit Least Squares		0.9147	788.39	550.44	538
Test	Default NTanH(3) Predicted Price	Neural		0.9741	434.19	301.12	538
Test	NTanH(3) NLinear(3) NGaussuan(3) NLinear2(3) NGaussian(3) Predicted Price	Neural		0.9779	401.57	277.28	538



Pricing Diamonds

Diamonds Data - Neural of Price - JMP Pro

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Neural

Model NTanH(3)NLinear(3)NGaussian(3)NTanH2(3)NLinear2(3)NGaussian2(3)

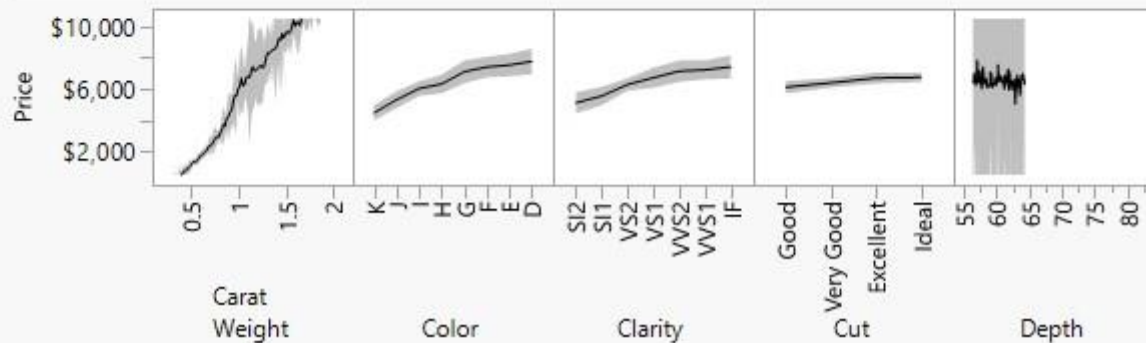
Prediction Profiler

Variable Importance: Independent Uniform Inputs

Summary Report

Column	Main Effect	Total Effect	.2	.4	.6	.8
Carat Weight	0.852	0.881				
Color	0.064	0.09				
Clarity	0.031	0.049				
Cut	0.002	0.004				
Depth	0.001	0.001				

Marginal Model Plots



Prediction Profiler

