

Modeling Freshmen Outcomes using SAS Enterprise Miner

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Data Mining

- Knowledge discovery by extracting information from large amounts of data
- Uses analytic tools for data-driven decision making
- Uses modeling techniques to apply results to future data
- Incorporates statistics, pattern recognition, and mathematics

Enterprise Miner Interface

The screenshot displays the Enterprise Miner software interface. On the left, the **Project Panel** shows a tree view of the project structure, including Data Sources (mergefile, study1, study2), Diagrams (NEAIRtest), Model Packages, and Users. Below it, the **Properties Panel** shows a table of properties for the selected node.

Property	Value
General	
Node ID	Ids
Imported Data	
Exported Data	
Notes	
Train	
Output Type	View
Role	Raw
Rerun	Yes
Summarize	No
Drop Map Variables	No
Columns	
Variables	
Decisions	
Refresh Metadata	
Advisor	Advanced
Advanced Options	
Data	
Data Selection	Data Source
Sample	Default

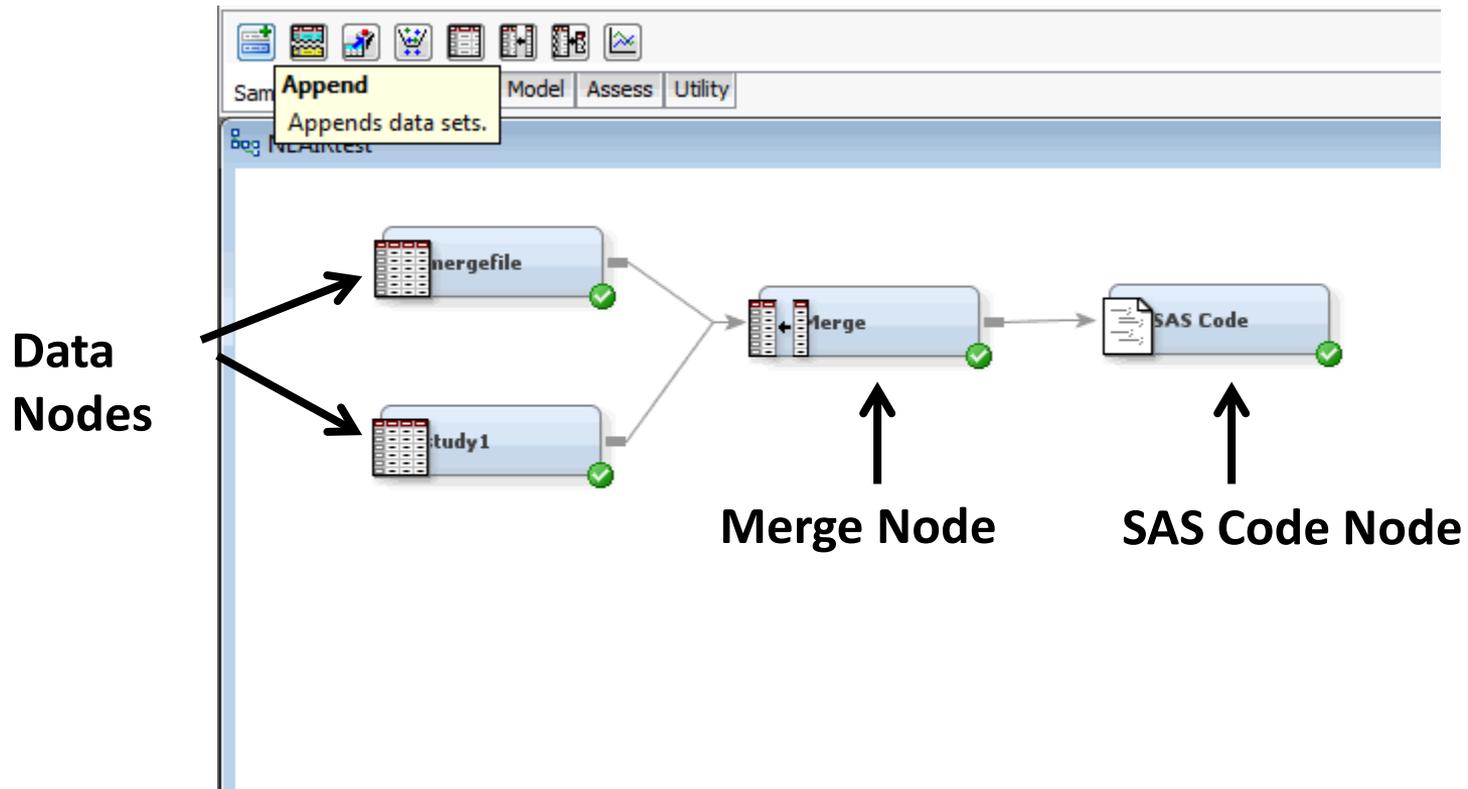
On the right, the **SEMMA Tools Palette** contains icons for Sample, Explore, Modify, Model, Assess, and Utility. Below it, the **Diagram Workspace** shows a diagram with a node labeled 'study1'.

SEMMA Tools Palette

- Sample
- Explore
- Modify
- Model
- Assess

Diagram Workspace

Project Flow Workspace



Variable Selection View

The screenshot displays the SAS Enterprise Miner interface. On the left, a project tree shows a project named 'NEAIR1' with sub-items for 'Data Sources' (mergefile, study1, study2), 'Diagrams', 'NEAIRtest', 'Model Packages', and 'Users'. Below the tree is a 'Property' table and a 'Variables' section.

The main workspace shows a flow diagram with a 'mergefile' data source. Overlaid on this is the 'Variables - Ids' dialog box, which is used for selecting and configuring variables for analysis. The dialog box includes a search filter at the top and a table of variables.

Name	Role	Level	Report	Order	Drop	Lower Limit	Upper Limit
SATCRMScoreAverageCB	Input	Interval	No		No	.	.
SATCRMWScoreAverageCB	Input	Interval	No		No	.	.
SATCriticalReadingScoreAverag	Input	Interval	No		No	.	.
SATMATHSCORE_MAX_r	Input	Interval	No		No	.	.
SATMathScoreAverageCB	Input	Interval	No		No	.	.
SATVERBALSCORE_MAX_r	Input	Interval	No		No	.	.
StateCodeCB	Rejected	Nominal	No		No	.	.
TOEFL_admin	Input	Interval	No		No	.	.
TuitionResidency_admin	Input	Binary	No		No	.	.
UNT_TAKEN_PRRSS	Input	Nominal	No		No	.	.
UnivSch_admin	Input	Binary	No		No	.	.
WISE_admin	Input	Binary	No		No	.	.
WRT102_ind_max	Input	Binary	No		No	.	.
WritPl_admin	Input	Nominal	No		No	.	.
eth_cat	Input	Nominal	No		No	.	.
filter__	Input	Binary	No		No	.	.
id	ID	Nominal	No		No	.	.
instate	Input	Binary	No		No	.	.
major	Text	Nominal	No		No	.	.
semstat	Rejected	Unary	No		No	.	.
temp_RESIDENCECOUNTY_MAX	Rejected	Nominal	No		No	.	.
term	Input	Nominal	No		No	.	.

Merge Node View

Variables - Merge

(none) not Equal to

Columns: Label Mining Basic Statistics

Name	Merge Role	Overwrite Variable	Role	Level
SATCRMScoreA	<none>	Default	Input	Interval
SATCRMWScore	<none>	Default	Input	Interval
SATCriticalReadi	<none>	Default	Input	Interval
SATMATHSCORE	<none>	Default	Input	Interval
SATMathScoreA	<none>	Default	Input	Interval
SATVERBALSCO	<none>	Default	Input	Interval
StateCodeCB	<none>	Default	Rejected	Nominal
TOEFL_admin	<none>	Default	Input	Interval
TuitionResidency	<none>	Default	Input	Binary
UNT_TAKEN_PR	<none>	Default	Input	Nominal
UnivSch_admin	<none>	Default	Input	Binary
WISE_admin	<none>	Default	Input	Binary
WRT102_ind_ma	<none>	Default	Input	Binary
WritPl_admin	<none>	Default	Input	Nominal
eth_cat	<none>	Default		
filter__	<none>	Default		
id	By	Default		
instate	<none>	Default		
major	<none>	Default		
semstat	<none>	Default	Rejected	Unary
temp_RESIDENC	<none>	Default	Rejected	Nominal
term	By	Default	Input	Nominal

Select the merge "by" variables

Merge Variable Specification

Property	Value
General	
Node ID	Merge
Imported Data	
Exported Data	
Notes	
Train	
Variables	
Merging	Match
By Ordering	
Overwrite Variables	No
<input checked="" type="checkbox"/> Variables Group	
Segment	No
Assess	No
Classification	No
Predicted or Posterior	No
Residual	No
Status	

By Ordering-WORK.BYORDER

Variable Name	Measurement Level	Role	Type	Label	Order	
term	NOMINAL	INPUT	N		1	↑ ↓
id	NOMINAL	ID	C	id	2	↑ ↓

Order the "by" variables

OK Cancel

SAS Code Node

The screenshot displays the SAS Enterprise Miner interface. On the left, a project tree shows 'NEAIR1' with sub-items like 'Data Sources', 'Diagrams', and 'Model Packages'. Below the tree is a 'Property' table for the 'Train' node.

Property	Value
Train	
Variables	
Code Editor	
Tool Type	Utility
Data Needed	No
Rerun	No
Use Priors	Yes
Score	
Advisor Type	Basic
Publish Code	Publish
Code Format	Datastep
Status	
Create Time	11/6/13 3:35 PM
Run Id	11e9c24d-d10e-4f2e-a214
Last Error	
Last Status	Complete
Last Run Time	11/7/13 2:09 PM
Run Duration	0 Hr. 0 Min. 2.78 Sec.
Grid Host	
User-Added Node	No

The main window shows the 'Training Code - Code Node' editor. It contains a macro definition for 'Train' and a 'Training Code' block with the following SAS code:

```
.. Macro
Train
Utility
EM_REGISTER
EM_REPORT
EM_DATA2CODE
EM_DECDATA
EM_CHECKMACRO
EM_CHECKSETINIT
EM_ODSLISTON
EM_ODSLISTOFF

Training Code
data &EM_EXPORT_TRAIN;
  set &EM_IMPORT_DATA;
  twoplus2 = 1 - twoplus;
run;

proc freq;
  tables twoplus twoplus2;
run;
```

Below the code editor is an 'Output' window showing the execution results:

```
1
2
```

The status bar at the bottom indicates: SUNYBS.EDU\ngalambos as sastrust - NEAIR1 - NEAIR - EMCODE - STATUS=NONE LASTSTATUS=COMPLETE

SAS Code Output

The FREQ Procedure

twoplus	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	2264	13.50	2264	13.50
1	14501	86.50	16765	100.00

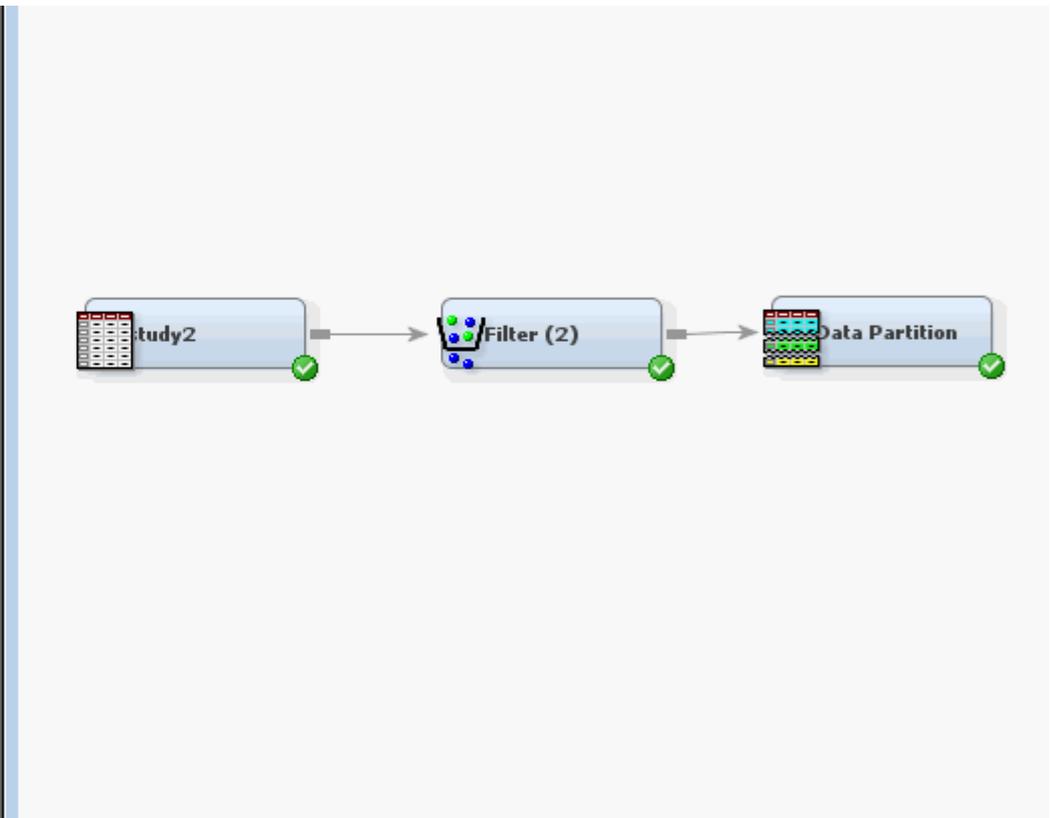
twoplus2	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	14501	86.50	14501	86.50
1	2264	13.50	16765	100.00

* Score Output

* Report Output

Filter and Data Partition Nodes

Property	Value
General	
Node ID	Ids
Imported Data	...
Exported Data	...
Notes	...
Train	
Output Type	View
Role	Raw
Rerun	Yes
Summarize	No
Drop Map Variables	No
Columns	
Variables	...
Decisions	...
Refresh Metadata	...
Advisor	Advanced
Advanced Options	...
Data	
Data Selection	Data Source
Sample	Default



Data Node Variable Selection/Configuration

Variables - Ids3

(none) not Equal to ...

Columns: Label Mining Basic Statistics

Name	Role	Level	Report	Order	Drop	Lower Limit	Upper Limit
StateCodeCB	Input	Nominal	No		No	.	.
TOEFL	Input	Interval	No		No	.	.
TuitionResidency_	Input	Binary	No		No	.	.
UNT_TAKEN_PRGR	Input	Nominal	No		No	.	.
UnivSch	Input	Interval	No		No	.	.
WISE	Input	Interval	No		No	.	.
WRT102_ind	Input	Interval	No		No	.	.
W_zerogpa	Input	Binary	No		No	.	.
WritPl	Input	Interval	No		No	.	.
ethnicity_cat	Input	Nominal	No		No	.	.
filter__	Input	Unary	No		No	.	.
gpafle	Input	Unary	No		No	.	.
id	ID	Nominal	No		No	.	.
instate	Input	Binary	No		No	.	.
major	Text	Nominal	No		No	.	.
mat_place	Input	Interval	No		No	.	.
oneyear	Input	Binary	No		No	.	.
semstat	Input	Unary	No		No	.	.
temp_RESIDENCEC	Input	Nominal	No		No	.	.
term	Input	Nominal	No		No	.	.
twoplus	Target	Binary	No		No	.	.
wrt_place	Input	Interval	No		No	.	.

Use dropdowns to configure variables

Filter Node Properties Panel

- Filter rare values
- Choose whether to keep missing values
- Create cutoffs

Property	Value
Train	
Export Table	Filtered
Tables to Filter	Training Data
Distribution Data Sets	Yes
Class Variables	
Class Variables	...
Default Filtering Method	Rare Values (Percentage)
Keep Missing Values	Yes
Normalized Values	Yes
Minimum Frequency Cutoff	1
Minimum Cutoff for Percent	0.01
Maximum Number of Levels	25
Interval Variables	
Interval Variables	...
Default Filtering Method	Standard Deviations from the Mean
Keep Missing Values	Yes
Tuning Parameters	...
Score	
Create score code	Yes
Status	

Filter Node Variable Selection

Variables - Ids3

(none) not Equal to Mining Label Basic Statistics

Name	Role	Level	Report	Order	Drop	Lower Limit	Upper Limit
PHY126_ind	Input	Binary	No		No	.	.
PHY131_ind	Input	Binary	No		No	.	.
PSY201_ind	Input	Binary	No		No	.	.
REGISTERED_GPA_G_max	Input	Nominal	No		Yes	.	.
RESIDENCECOUNTYCODE	Rejected	Nominal	No		No	.	.
RESIDENCECOUNTY_MAX	Rejected	Nominal	No		No	.	.
RESIDENCYADMISSIONS	Rejected	Nominal	No		No	.	.
RESIDENCYTUITIONSTAT	Rejected	Nominal	No		No	.	.
RESIDENCYTUITION_MAX	Rejected	Nominal	No		No	.	.
SAT1600SCORE	Input	Interval	No		No	.	.
SATMATHSCORE	Input	Interval	No		No	.	.
SATVERBALSORE	Input	Interval	No		No	.	.
StateCodeCB	Input	Nominal	No		No	.	.
TOEFL	Input	Binary	No		No	.	.
TuitionResidency_admin	Input	Binary	No		No	.	.
UNT_TAKEN_PRGRSS	Input	Nominal	No		No	.	.
UnivSch	Input	Binary	No		No	.	.
WISE	Input	Binary	No		No	.	.
WRT102_ind	Input	Binary	No		No	.	.
W_zerogpa	Input	Binary	No		Yes	.	.
WritPl	Input	Interval	No		Yes	.	.

Set to automatically reject variables with too many categories—user specifies the maximum number of categories

Explore... OK Cancel

Interactive Categorical Filter

Interactive Class Filter

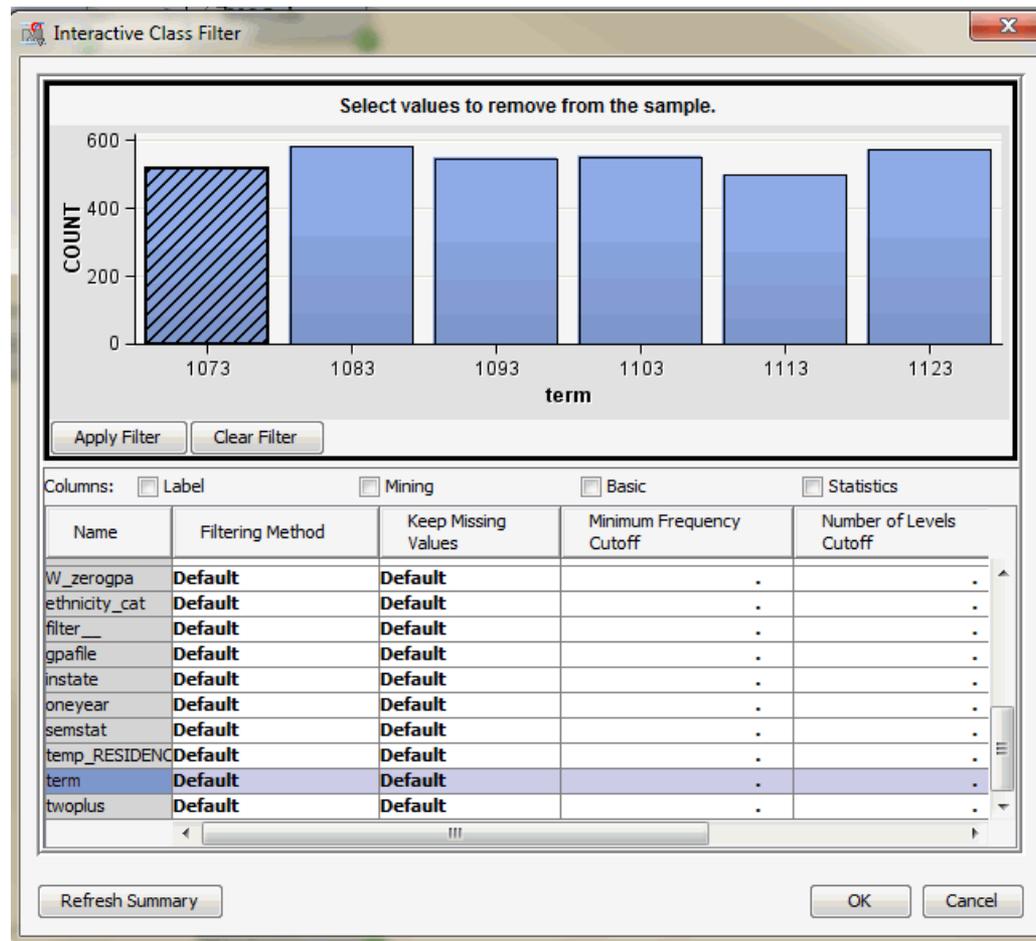
Columns: Label Mining Basic Statistics

Name	vels	Report	Role	Level	Number of Levels	Percent Missing	Minimum	Maximum	Mean	Standard Deviation	Skewness
ACAD_PROG_PRIMARY	.	No	Input	Nominal	.	.	.	.	.	.	.
EOPStatus_admin	.	No	Input	Nominal	3	18.15571	.	.	.	.	.
EPSGeomarketCB	.	No	Rejected	Nominal	30	33.39037	.	.	.	.	.
HighSchoolNameCB	.	No	Rejected	Nominal	30	77.5689	.	.	.	.	.
REGISTERED_GPA_G_max	.	No	Input	Nominal	3	0	.	.	.	.	.
RESIDENCECOUNTYCODE_MAX_r	.	No	Rejected	Nominal	30	8.909283	.	.	.	.	.
RESIDENCECOUNTY_MAX_r	.	No	Rejected	Nominal	30	8.909283	.	.	.	.	.
RESIDENCYADMISSIONS_MAX_r	.	No	Rejected	Nominal	31	0	.	.	.	.	.
RESIDENCYTUITIONSTATE_MAX_r	.	No	Rejected	Nominal	31	0	.	.	.	.	.
RESIDENCYTUITION_MAX_r	.	No	Rejected	Nominal	31	0	.	.	.	.	.
StateCodeCB	.	No	Input	Nominal	30	26.00184	.	.	.	.	.
TuitionResidency_admin	.	No	Input	Binary	2	18.1496	.	.	.	.	.
UNT_TAKEN_PRGRSS	.	No	Input	Nominal	11	0.916646	.	.	.	.	.
WISE	.	No	Input	Binary	.	.	.	.	.	.	.
W_zeroGpa	.	No	Input	Binary	2	0	.	.	.	.	.
ethnicity_cat	.	No	Input	Nominal	.	.	.	.	.	.	.
filter__	.	No	Input	Unary	1	0	.	.	.	.	.
gpafle	.	No	Input	Unary	1	0	.	.	.	.	.
instate	.	No	Input	Binary	2	0	.	.	.	.	.
oneyear	.	No	Input	Binary	2	0	.	.	.	.	.
semstat	.	No	Input	Unary	1	0	.	.	.	.	.
temp_RESIDENCECOUNTY_MAX_r	.	No	Input	Nominal	30	8.909283	.	.	.	.	.
term	.	No	Input	Nominal	6	0	.	.	.	.	.
twoplus	.	No	Target	Binary	2	0	.	.	.	.	.

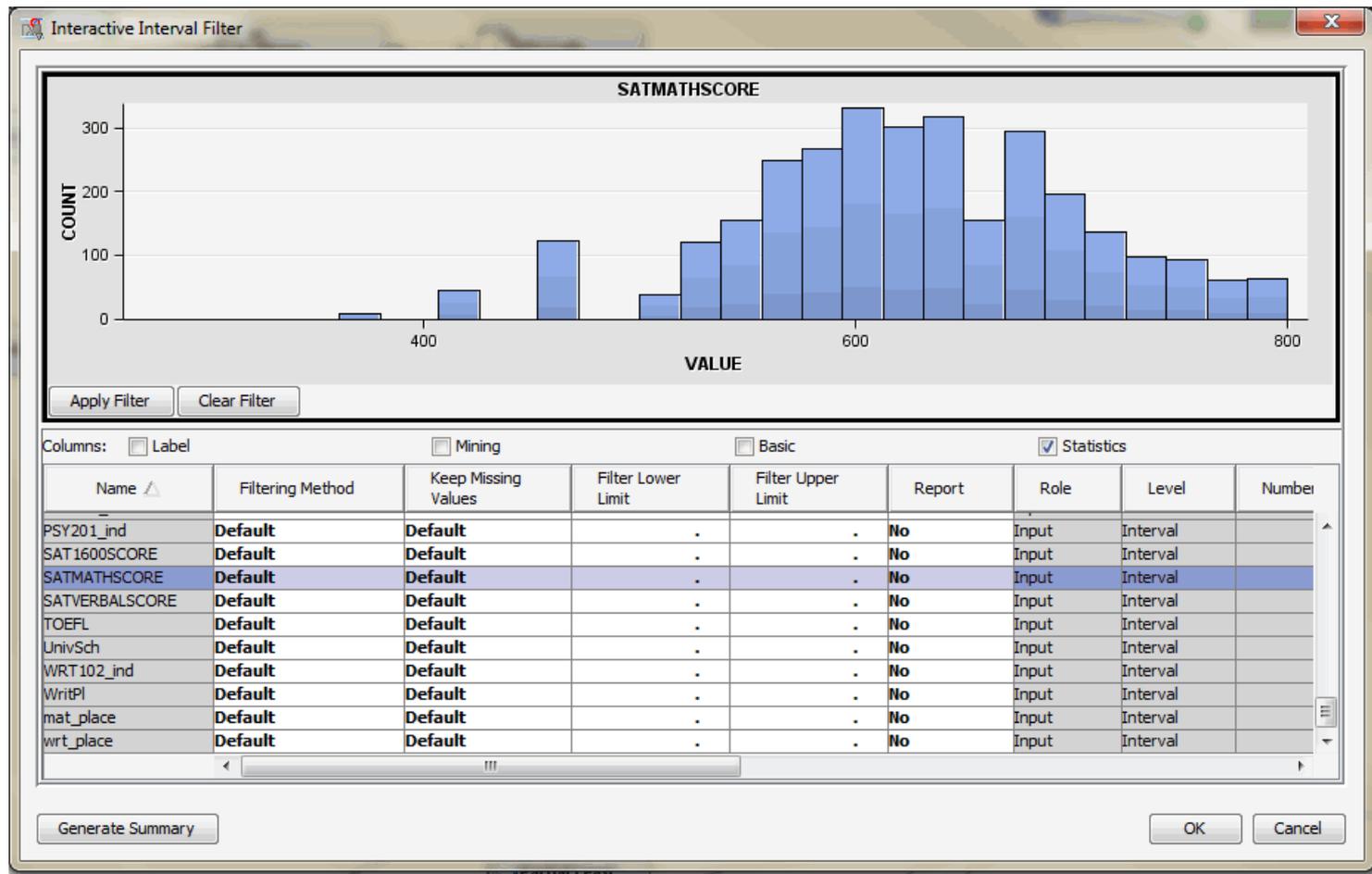
Generate Summary

OK Cancel

Filtering Class Categories



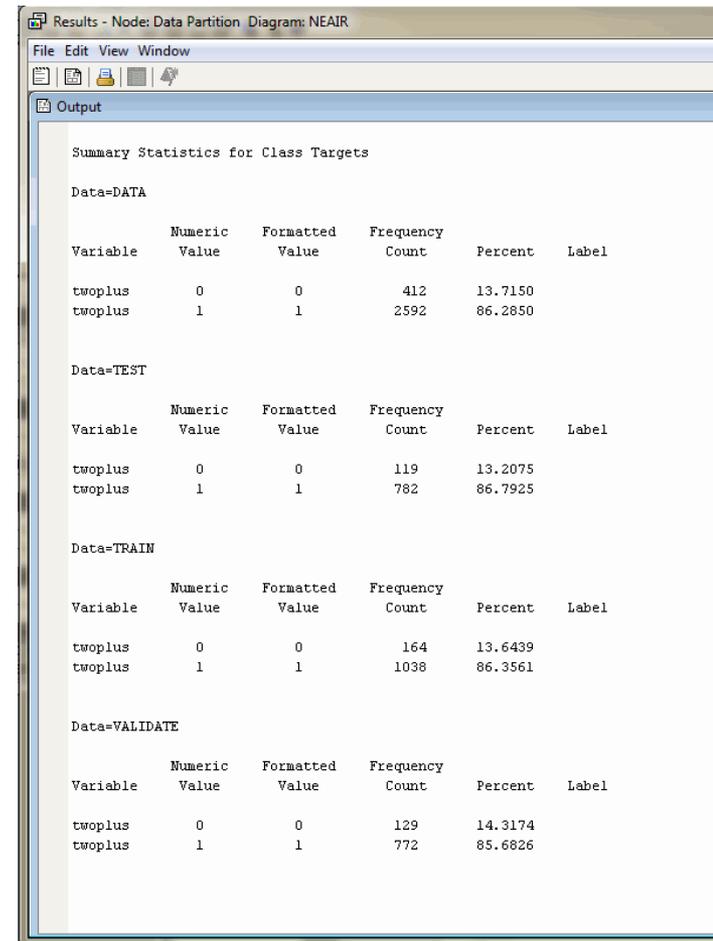
Interactive Interval Filter



Training, Validation, and Test Partitions

Find the correct level of model complexity. A model that is not complex enough may lack the flexibility to represent the data, underfitting. When the model is too complex it can be influenced by random noise, overfitting.

Partitioning is used to avoid over- or underfitting. The training partition is used to build the model. The validation partition is set aside and is used to test the accuracy and fine tune the model. The test partition is used for evaluating how the model will work on new data.



Results - Node: Data Partition Diagram: NEAIR

File Edit View Window

Output

Summary Statistics for Class Targets

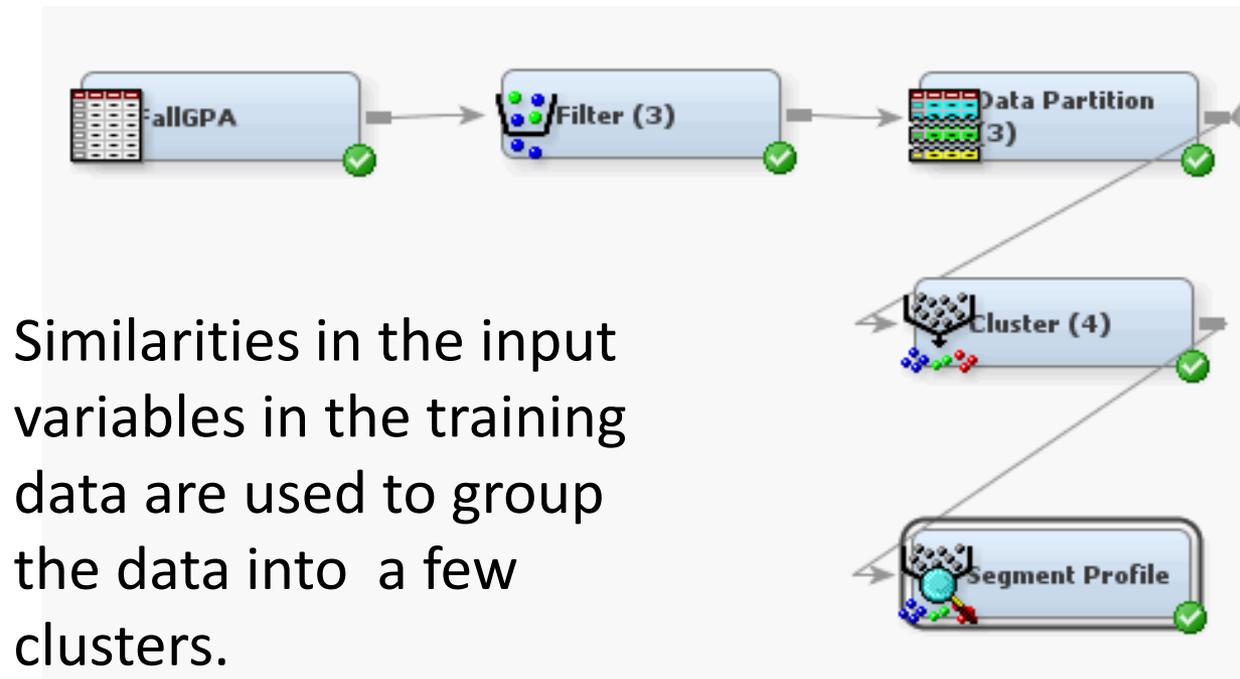
Data=DATA					
Variable	Numeric Value	Formatted Value	Frequency Count	Percent	Label
twoplus	0	0	412	13.7150	
twoplus	1	1	2592	86.2850	

Data=TEST					
Variable	Numeric Value	Formatted Value	Frequency Count	Percent	Label
twoplus	0	0	119	13.2075	
twoplus	1	1	782	86.7925	

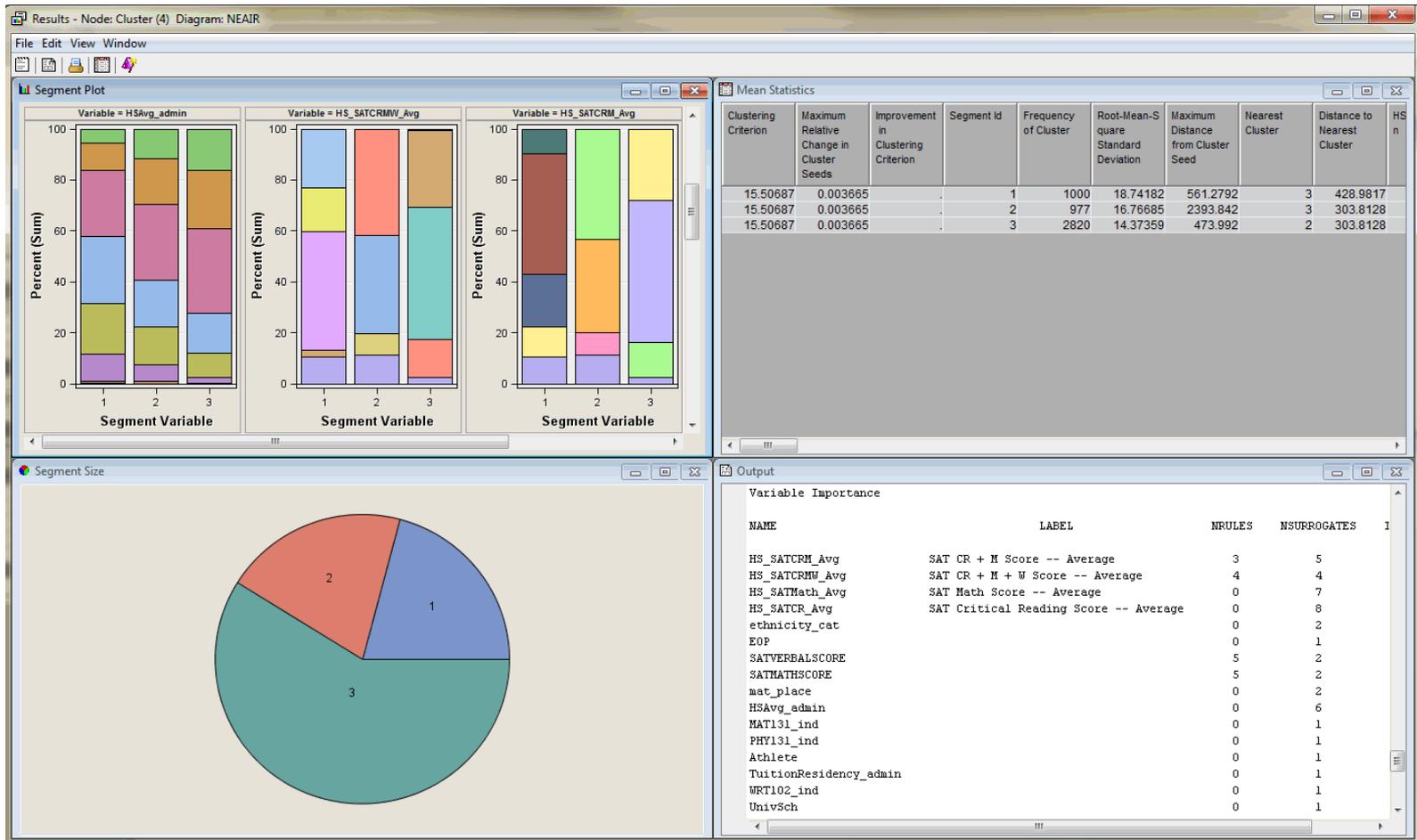
Data=TRAIN					
Variable	Numeric Value	Formatted Value	Frequency Count	Percent	Label
twoplus	0	0	164	13.6439	
twoplus	1	1	1038	86.3561	

Data=VALIDATE					
Variable	Numeric Value	Formatted Value	Frequency Count	Percent	Label
twoplus	0	0	129	14.3174	
twoplus	1	1	772	85.6826	

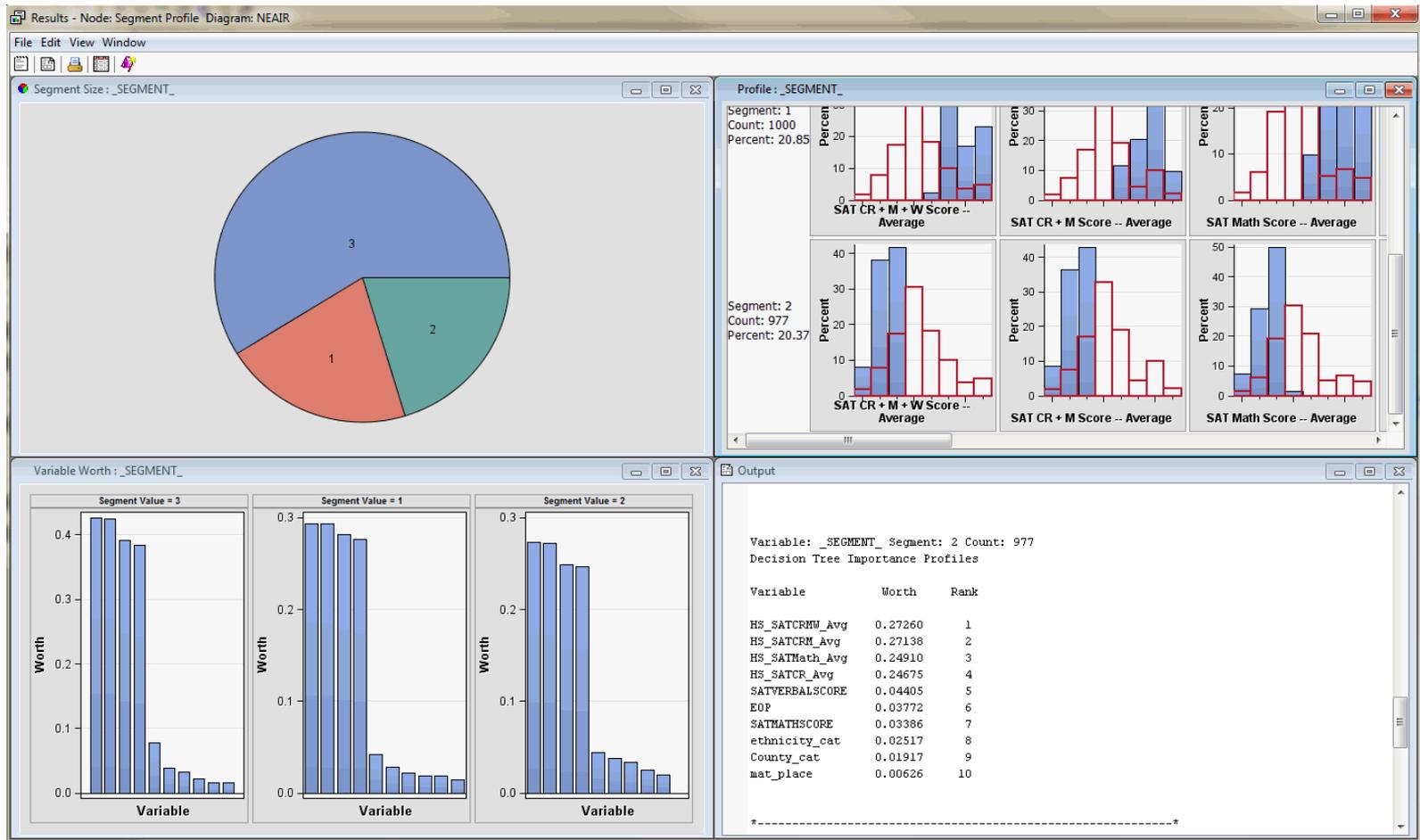
Cluster Analysis and Segment Profile Nodes



Cluster Analysis Results



Segment Profile



Segment Profile Detail

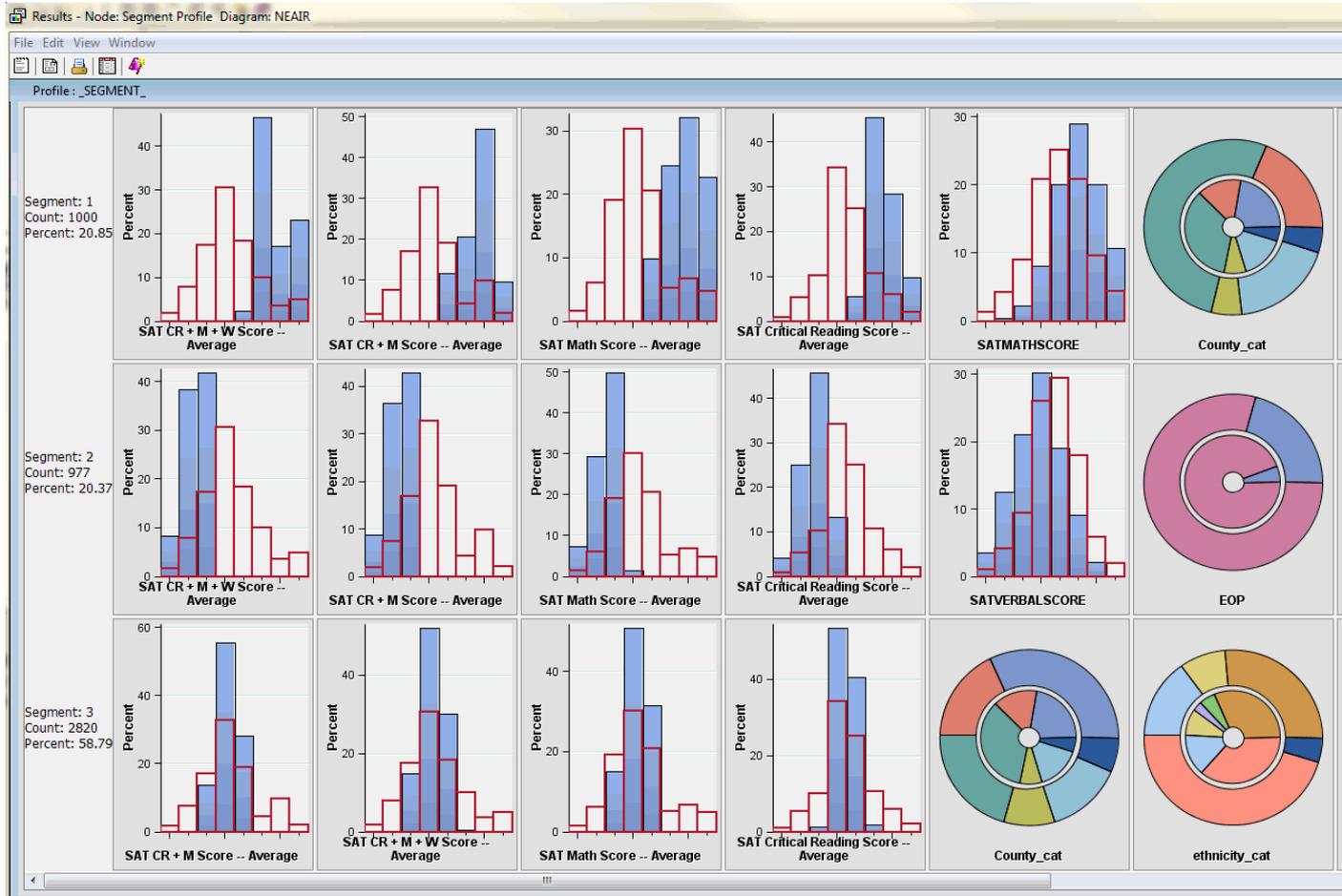
Results - Node: Segment Profile Diagram: NEAIR

File Edit View Window

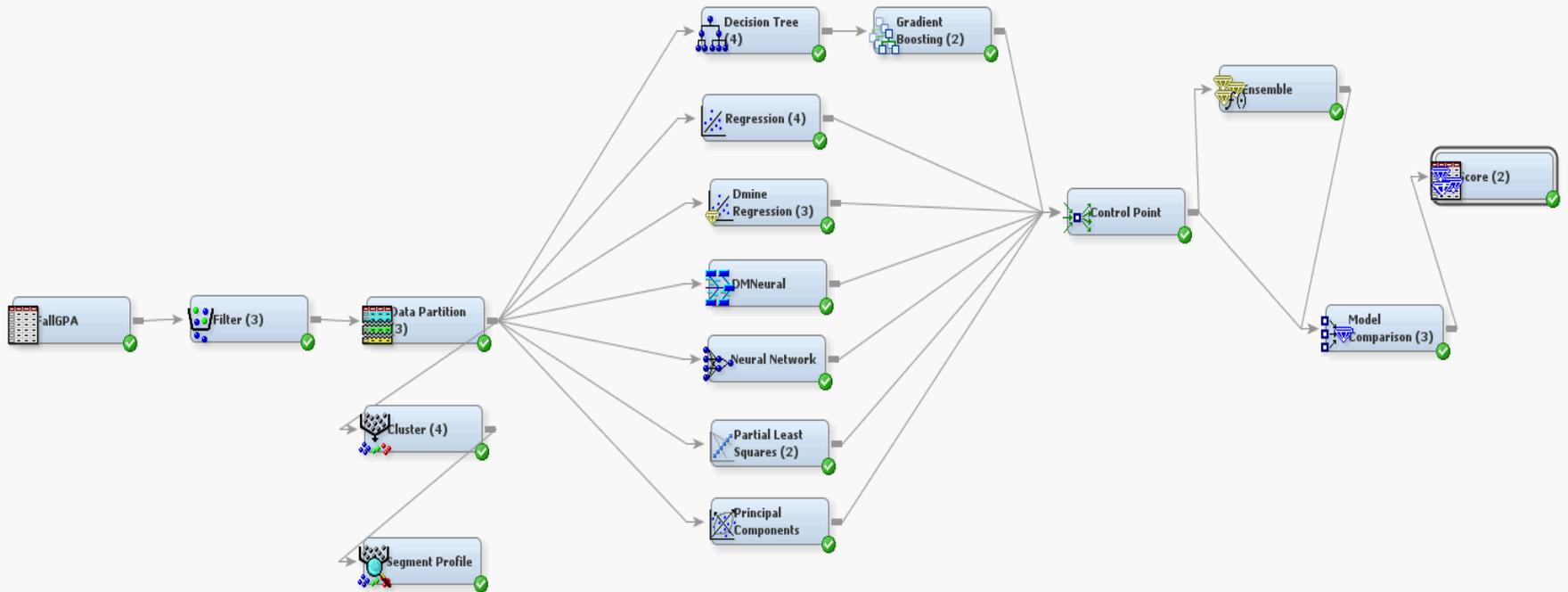
Class Variables

Segment Variable	Segment Value	Variable	Value	Frequency Count	Percent	Group Index
OVERALL	EMWS.Clus...	County_cat	1	1060	22.09714	0
OVERALL	EMWS.Clus...	County_cat	2	727	15.15531	0
OVERALL	EMWS.Clus...	County_cat	3	1658	34.56327	0
OVERALL	EMWS.Clus...	County_cat	4	125	2.605795	0
OVERALL	EMWS.Clus...	County_cat	5	115	2.397332	0
OVERALL	EMWS.Clus...	County_cat	6	378	7.879925	0
OVERALL	EMWS.Clus...	County_cat	7	734	15.30123	0
OVERALL	EMWS.Clus...	EOP	0	4533	94.49656	0
OVERALL	EMWS.Clus...	EOP	1	264	5.50344	0
OVERALL	EMWS.Clus...	ethnicity_cat	A	1503	31.33208	0
OVERALL	EMWS.Clus...	ethnicity_cat	B	274	5.711903	0
OVERALL	EMWS.Clus...	ethnicity_cat	F	140	2.918491	0
OVERALL	EMWS.Clus...	ethnicity_cat	H	450	9.380863	0
OVERALL	EMWS.Clus...	ethnicity_cat	U	696	14.50907	0
OVERALL	EMWS.Clus...	ethnicity_cat	W	1734	36.14759	0
_SEGMENT_3		County_cat	1	911	32.30496	1
_SEGMENT_3		County_cat	2	484	17.16312	1
_SEGMENT_3		County_cat	3	597	21.17021	1
_SEGMENT_3		County_cat	4	72	2.553191	1
_SEGMENT_3		County_cat	5	106	3.758865	1
_SEGMENT_3		County_cat	6	260	9.219858	1
_SEGMENT_3		County_cat	7	390	13.82979	1
_SEGMENT_3		EOP	0	2764	98.01418	1
_SEGMENT_3		EOP	1	56	1.985816	1
_SEGMENT_3		ethnicity_cat	A	746	26.4539	1
_SEGMENT_3		ethnicity_cat	B	81	2.87234	1
_SEGMENT_3		ethnicity_cat	F	47	1.666667	1
_SEGMENT_3		ethnicity_cat	H	237	8.404255	1
_SEGMENT_3		ethnicity_cat	U	413	14.64539	1
_SEGMENT_3		ethnicity_cat	W	1296	45.95745	1
_SEGMENT_1		County_cat	1	15	1.5	1
_SEGMENT_1		County_cat	2	189	18.9	1
_SEGMENT_1		County_cat	3	522	52.2	1
_SEGMENT_1		County_cat	4	33	3.3	1
_SEGMENT_1		County_cat	5	2	0.2	1
_SEGMENT_1		County_cat	6	53	5.3	1
_SEGMENT_1		County_cat	7	186	18.6	1
_SEGMENT_1		ethnicity_cat	A	480	48	1
_SEGMENT_1		ethnicity_cat	B	40	4	1
_SEGMENT_1		ethnicity_cat	F	53	5.3	1
_SEGMENT_1		ethnicity_cat	H	42	4.2	1
_SEGMENT_1		ethnicity_cat	U	176	17.6	1
_SEGMENT_1		ethnicity_cat	W	209	20.9	1
_SEGMENT_2		County_cat	1	134	13.71546	1
_SEGMENT_2		County_cat	2	54	5.527124	1

Segment Profile Graphic Comparisons



Full Enterprise Miner Model



Decision Tree Configuration

Splitting Rule	
Interval Criterion	ProbF
Nominal Criterion	ProbChisq
Ordinal Criterion	Entropy
Significance Level	0.2
Missing Values	Use in search
Use Input Once	No
Maximum Branch	5
Maximum Depth	6
Minimum Categorical Size	5
Node	
Leaf Size	5
Number of Rules	5
Number of Surrogate Rules	0
Split Size	
Split Search	
Exhaustive	5000
Node Sample	20000
Subtree	
Method	Assessment
Number of Leaves	1
Assessment Measure	Decision
Assessment Fraction	0.25
Cross Validation	
Perform Cross Validation	No
Number of Subsets	10
Number of Repeats	1
Seed	12345
Observation Based Importa	
Observation Based Importa	No
Number Single Var Importar	5
P-Value Adjustment	
Bonferroni Adjustment	Yes
Time of Kass Adjustment	Before
Inputs	No
Number of Inputs	1
Split Adjustment	Yes
Output Variables	
Leaf Variable	Yes

Interactive Decision Tree Building: Categorical Outcome First Semester Freshmen GPA above/below 2.00

Interactive Decision Tree - EMWS.TREE6_BROWSETREE[EMWS.TREE6_TRAINSAMPLE]

File Edit View Tools Train Window

Tree View

Statistics	Train	Validation
1:	86.6%	86.5%
0:	13.4%	13.5%
Count:	6544	4910

Split Node 1

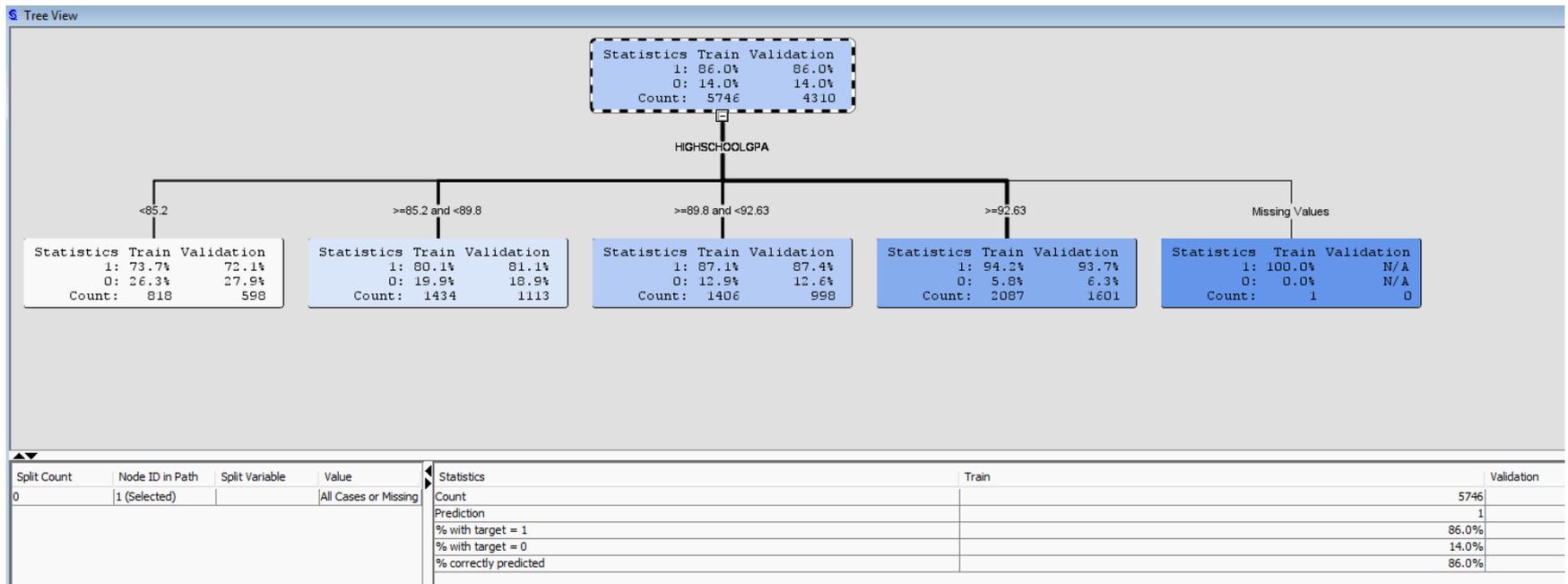
Target Variable: twoplus

Variable	Variable Description	-Log(p)	Branches
HIGHSCHOOLGPA	HIGHSCHOOLGPA	63.27311	5
WRT102_ind	WRT102_ind	17.37140	2
mat_place	mat_place	14.12556	4
MathPl	MathPl	13.62510	5
UnivSch	UnivSch	7.86305	3
PHY125_ind	PHY125_ind	5.71857	2
WISE	WISE	5.20522	3
HonCol	HonCol	4.70590	3
HonorsCollege	HonorsCollege	4.63641	2
SATMATHSCORE	SATMATHSCORE	4.36101	2
ACAD_PROG_PRIMARY	ACAD_PROG_PRIMARY	3.62559	5
Athlete	Athlete	3.58768	3
MAP103_ind	MAP103_ind	3.41201	2
County_cat	County_cat	3.31122	2
ethnicity_cat	ethnicity_cat	3.31002	5
MAT126_ind	MAT126_ind	3.30771	2
MAT132_ind	MAT132_ind	3.30050	2

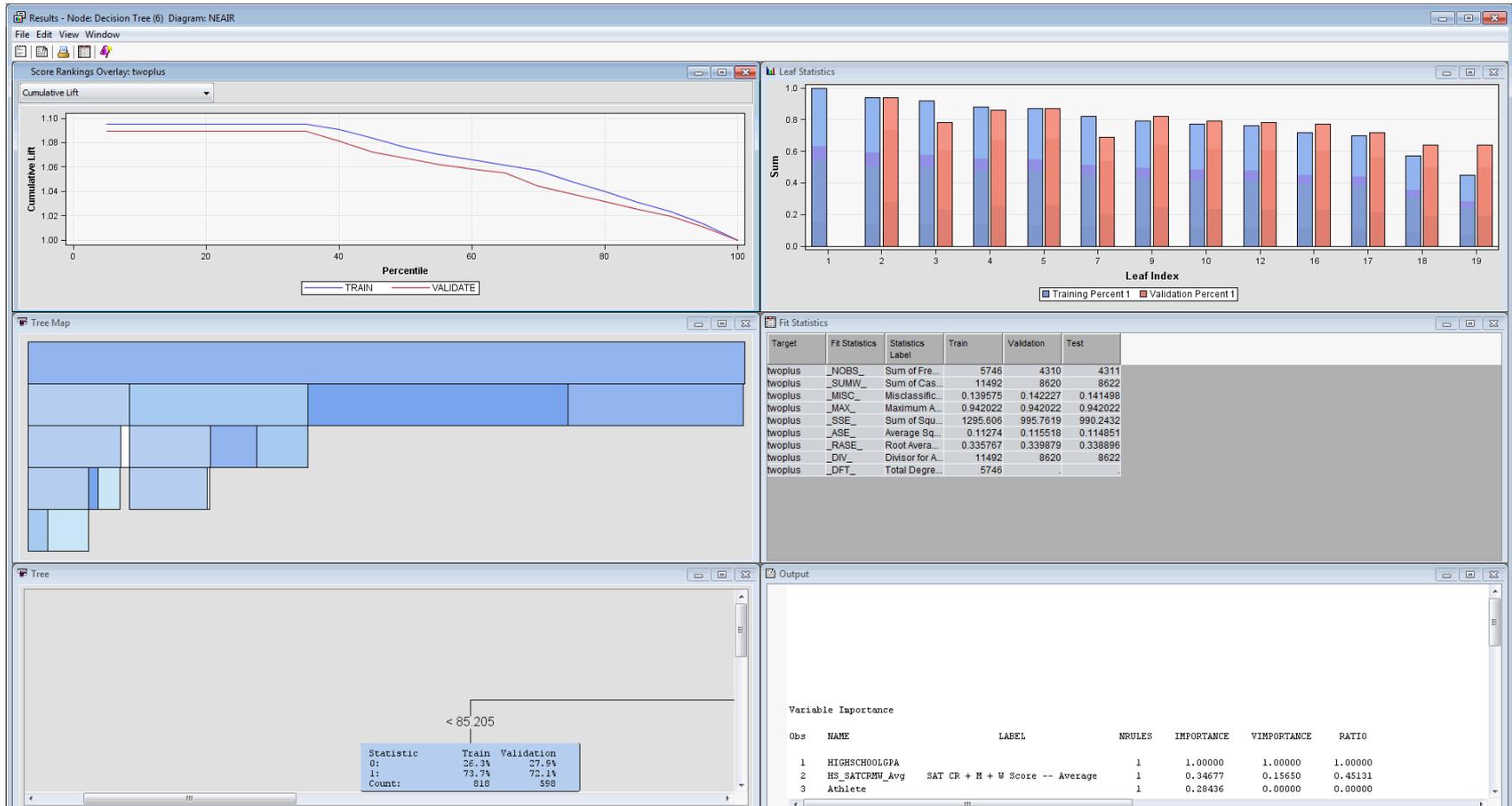
OK Cancel Apply Refresh

Split Count	Node ID in Path	Split Variable	Value	Statistics
0	1 (Selected)		All Cases or Missing	Count Prediction % with target = 1 % with target = 0 % correctly predicted

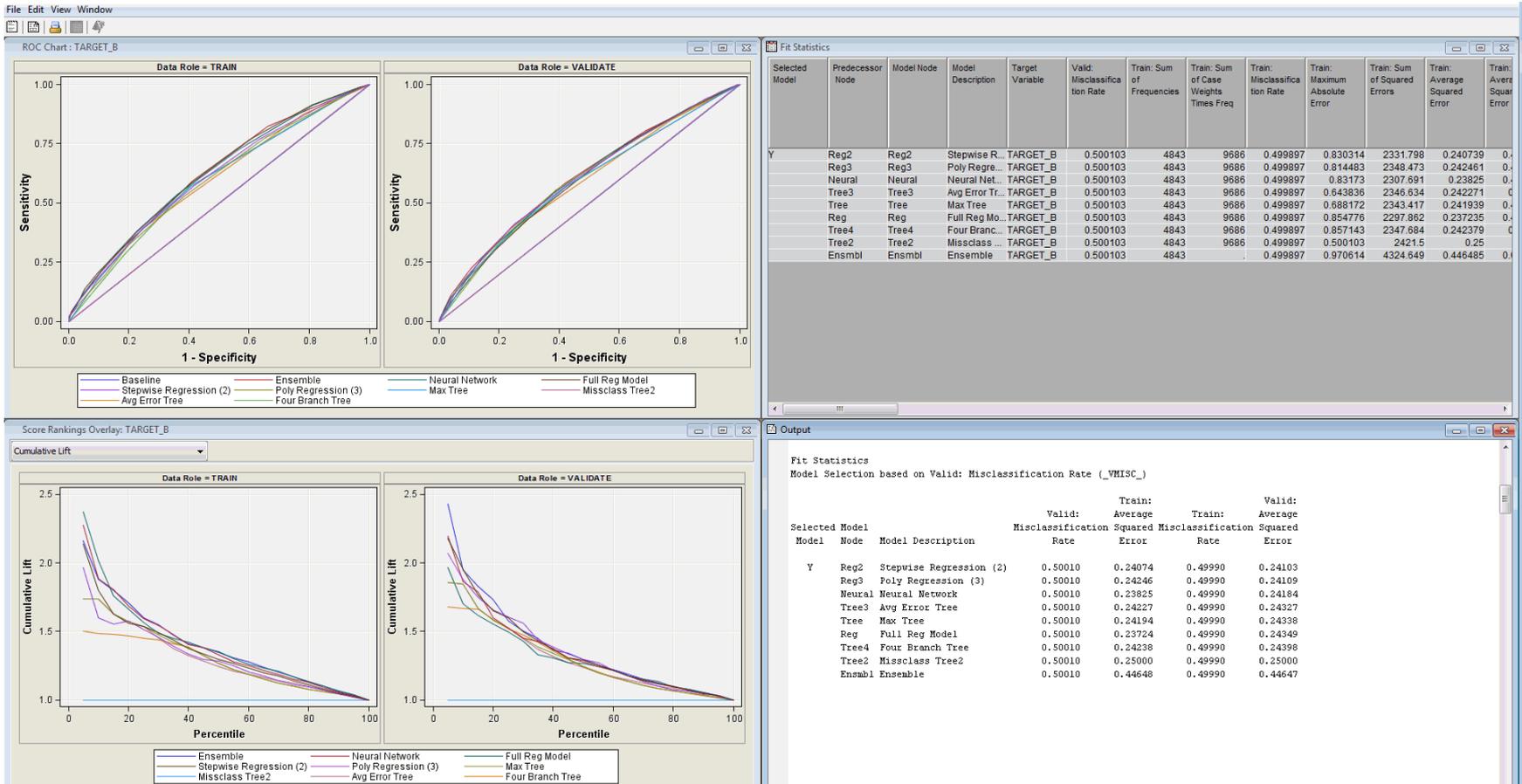
Adding Tree Branches and Leaves



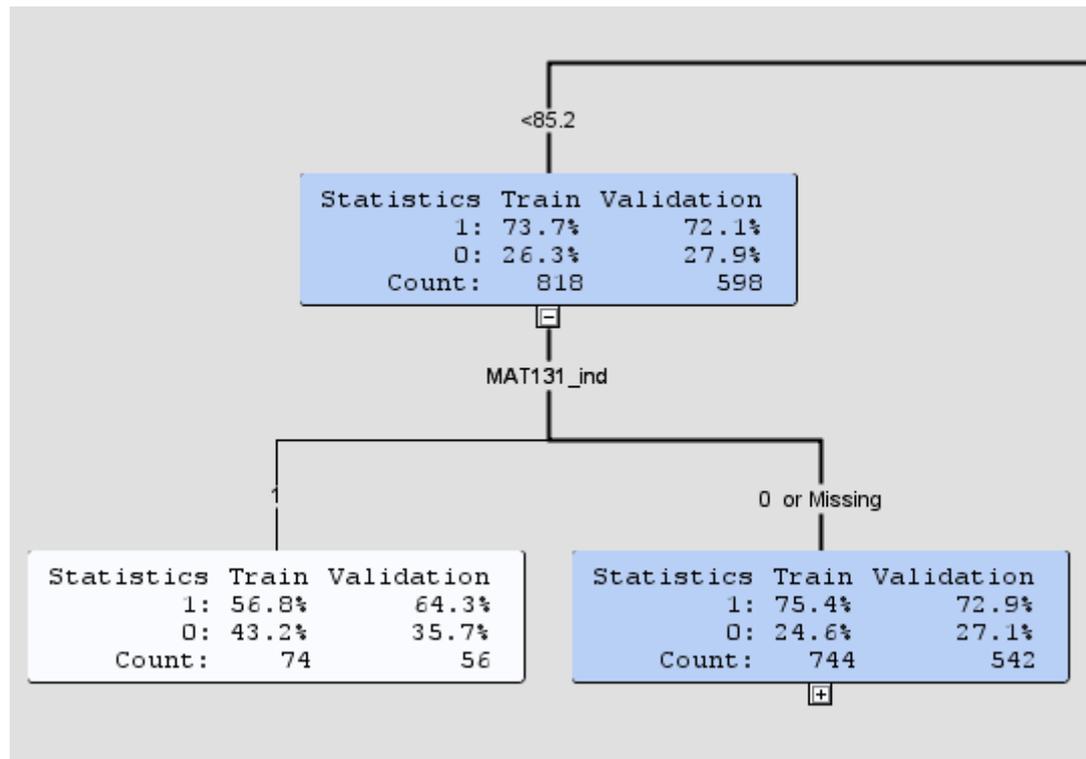
Evaluating a Decision Tree with a Categorical Outcome



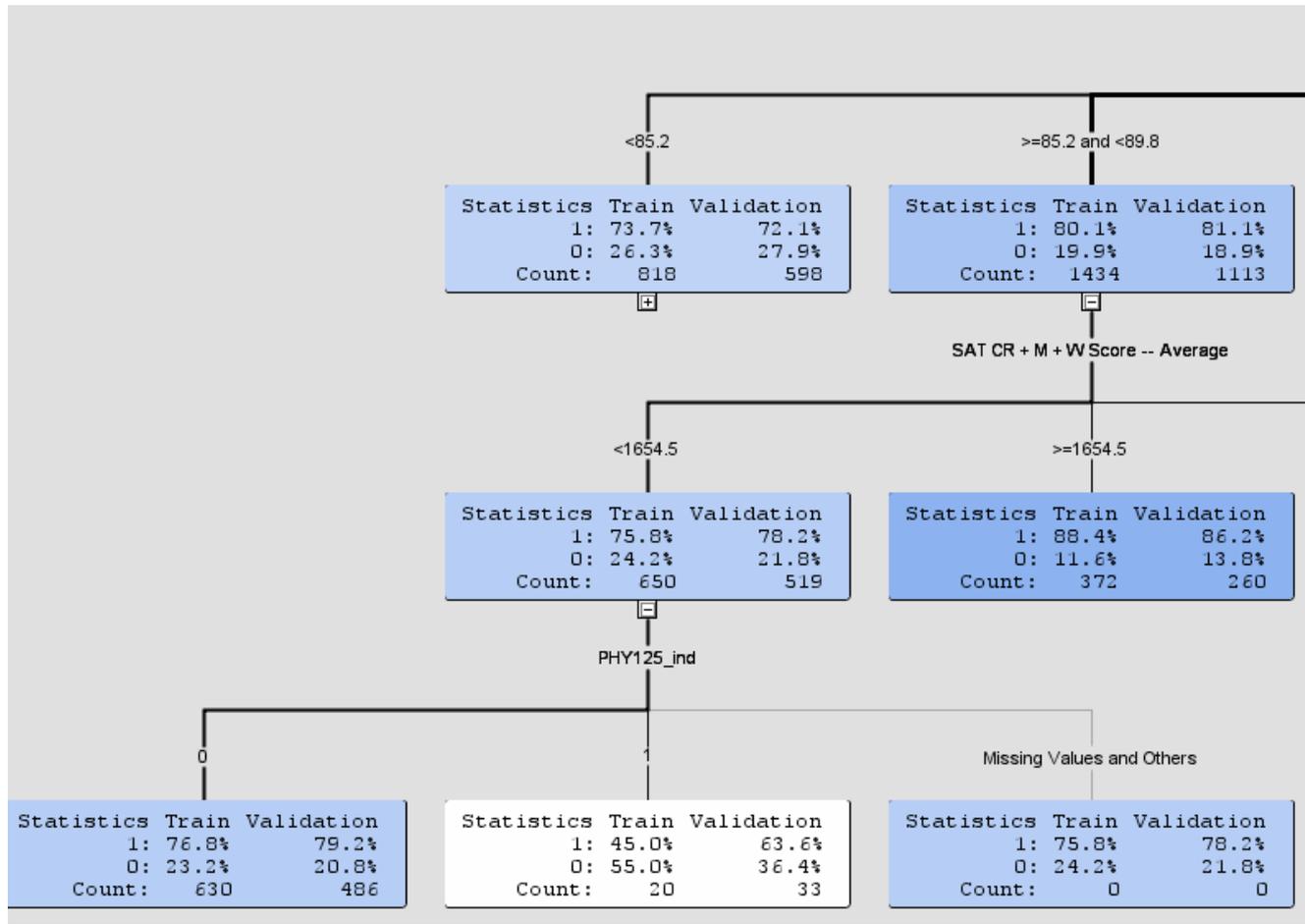
Receiver Operator Curves and Cumulative Lift



Decision Tree with Interval Outcome

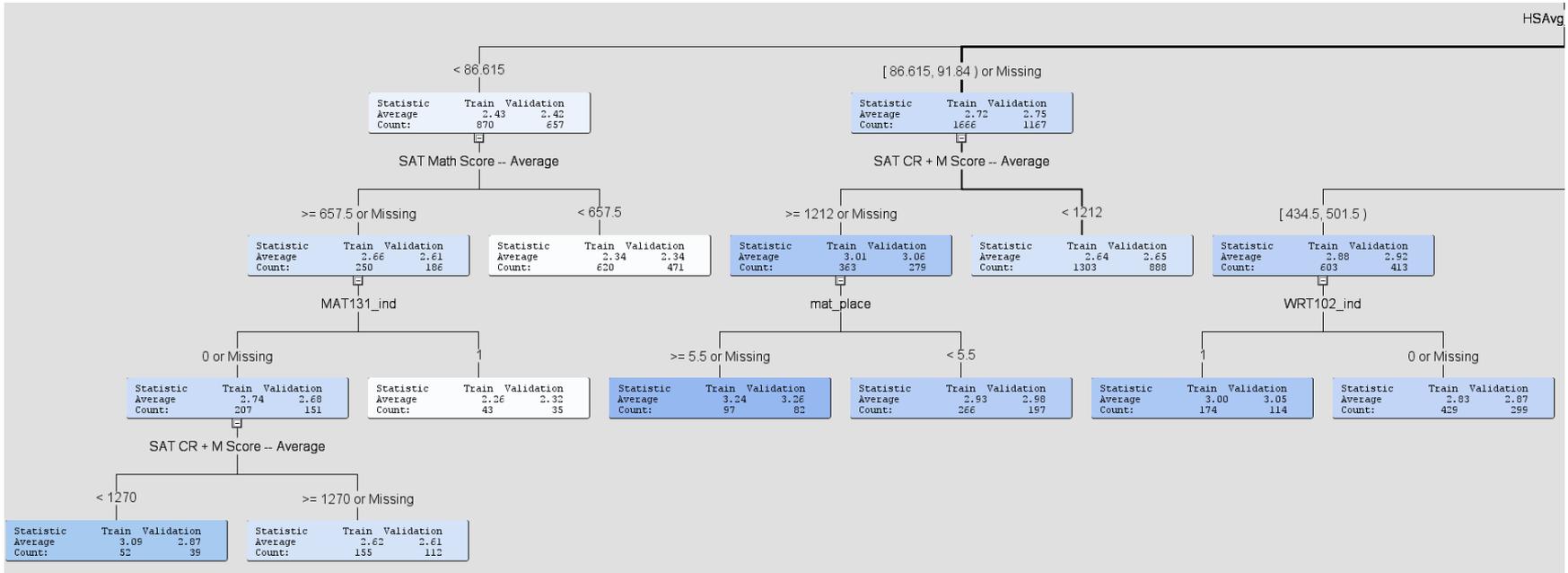


Using Decision Tree to Predict First Semester Freshmen GPA

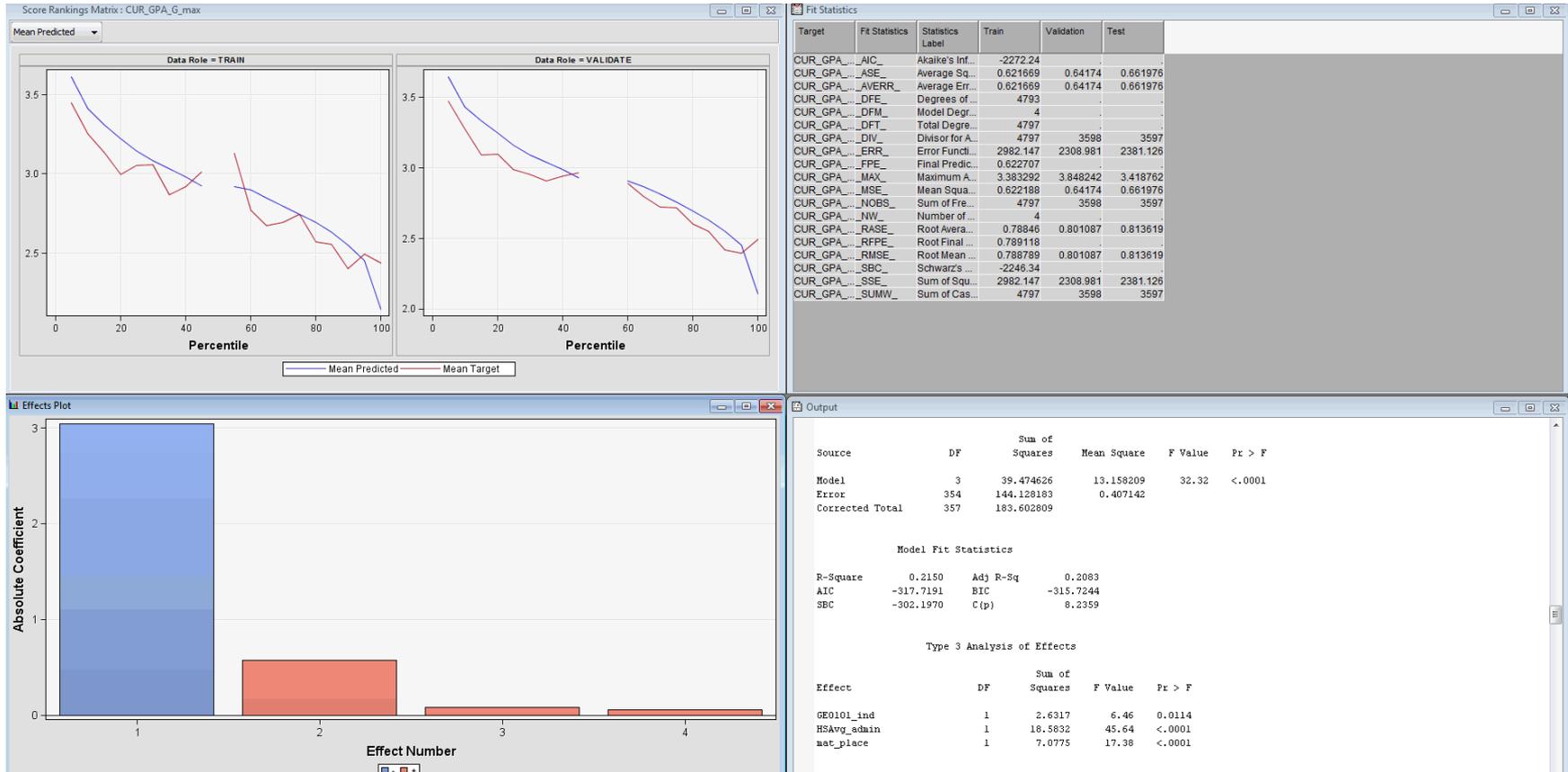


Decision Tree View

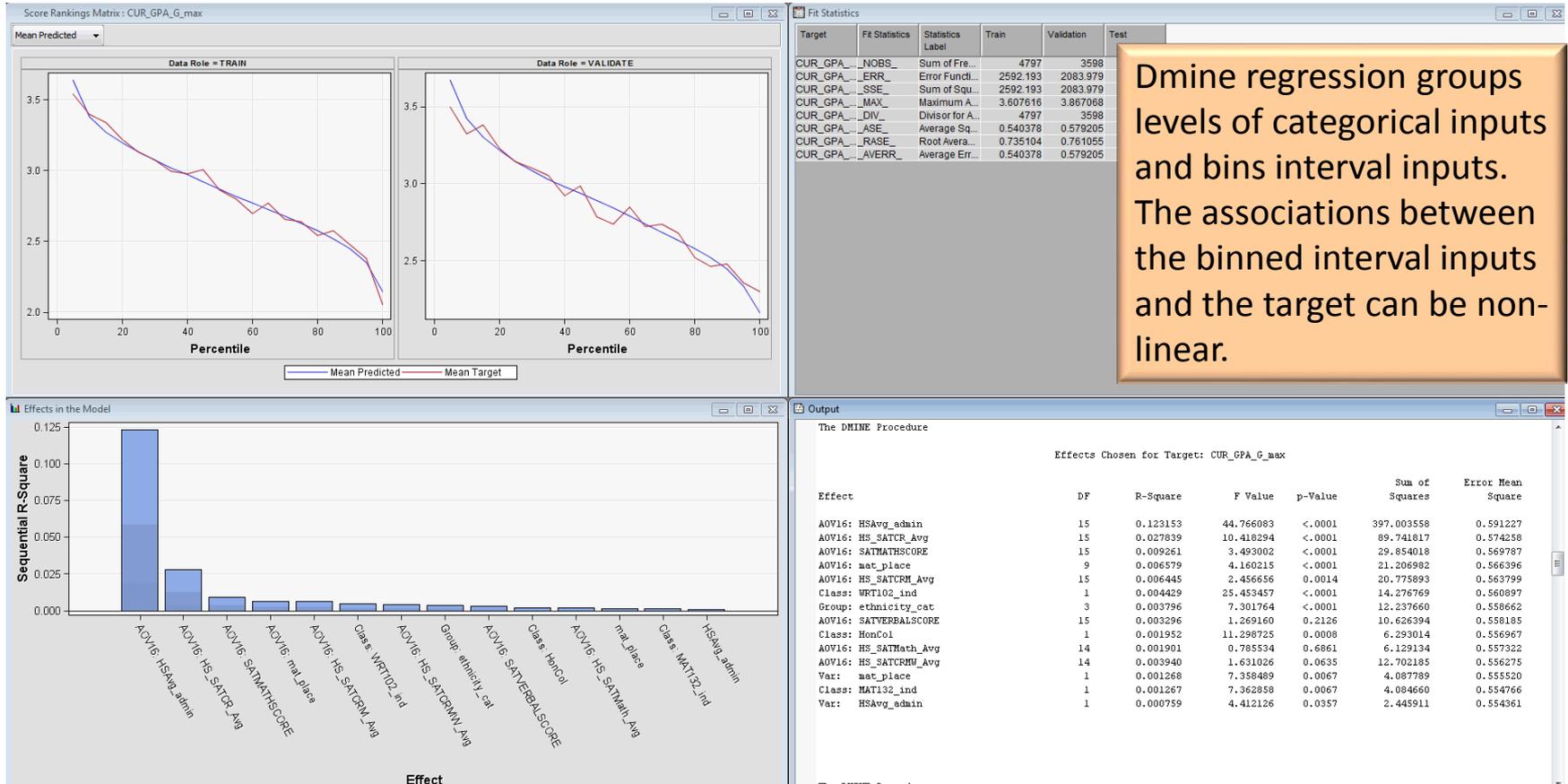
HSAvg



Linear Regression Model

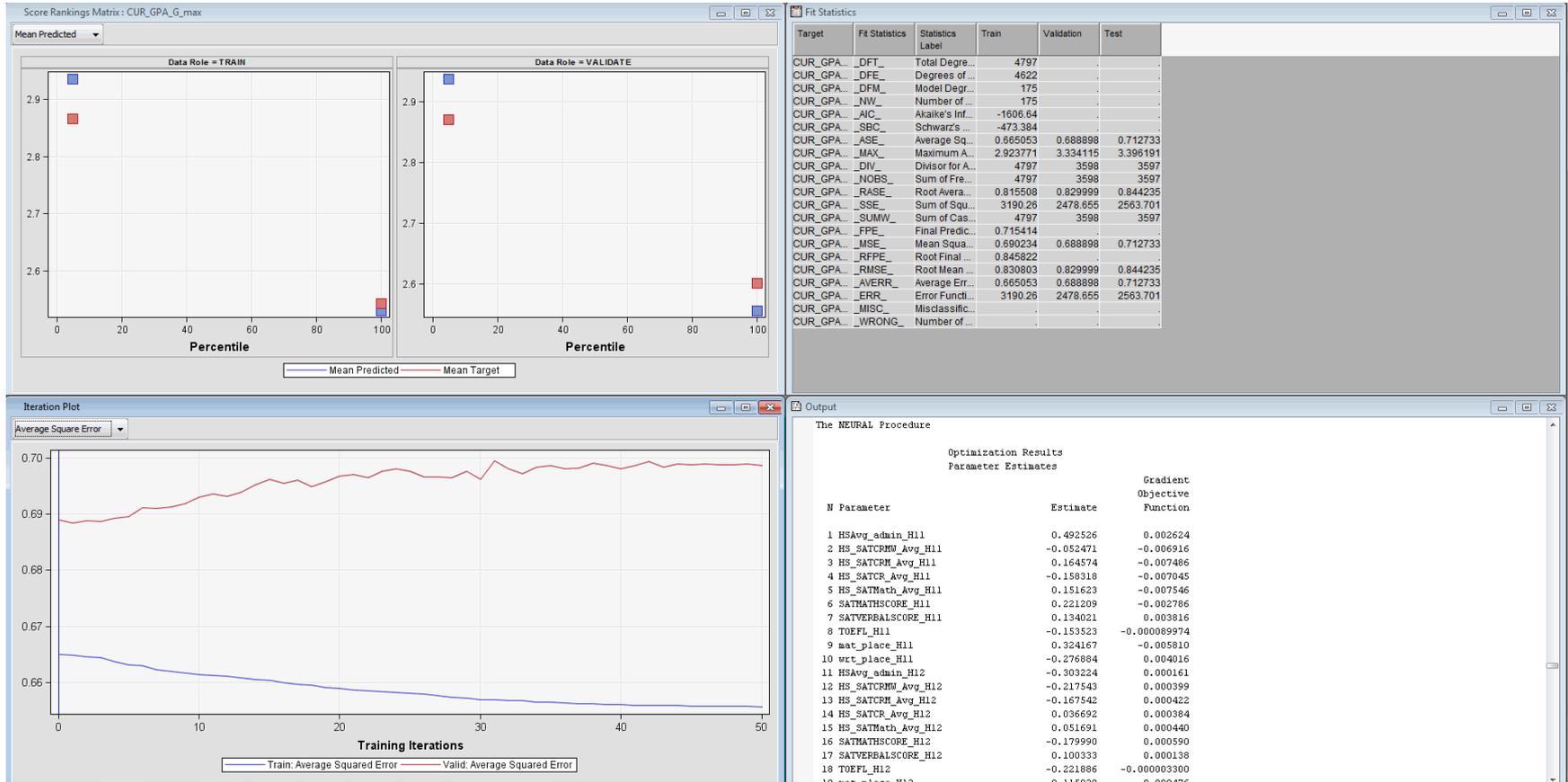


Dmine Regression Model

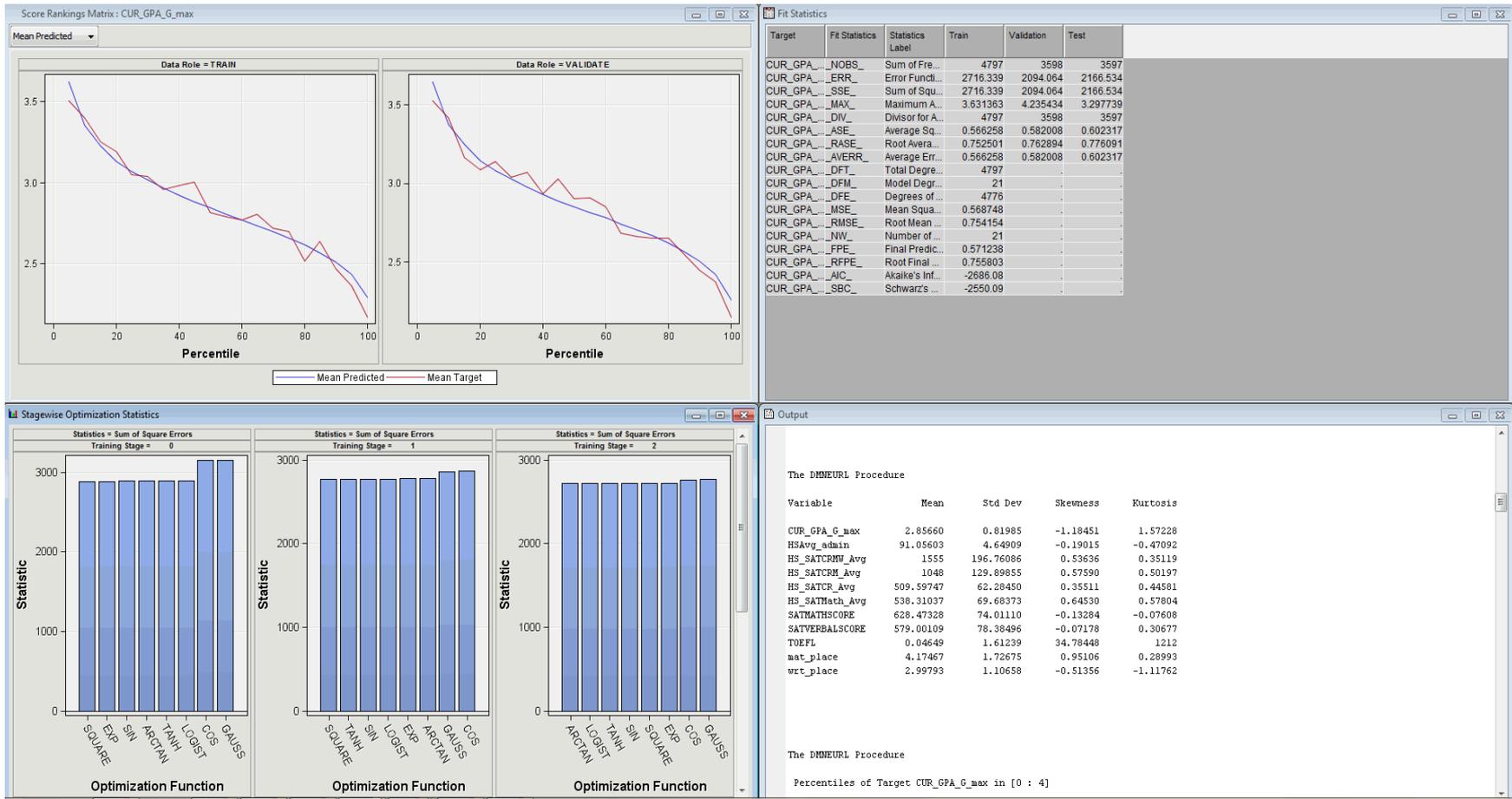


Dmine regression groups levels of categorical inputs and bins interval inputs. The associations between the binned interval inputs and the target can be non-linear.

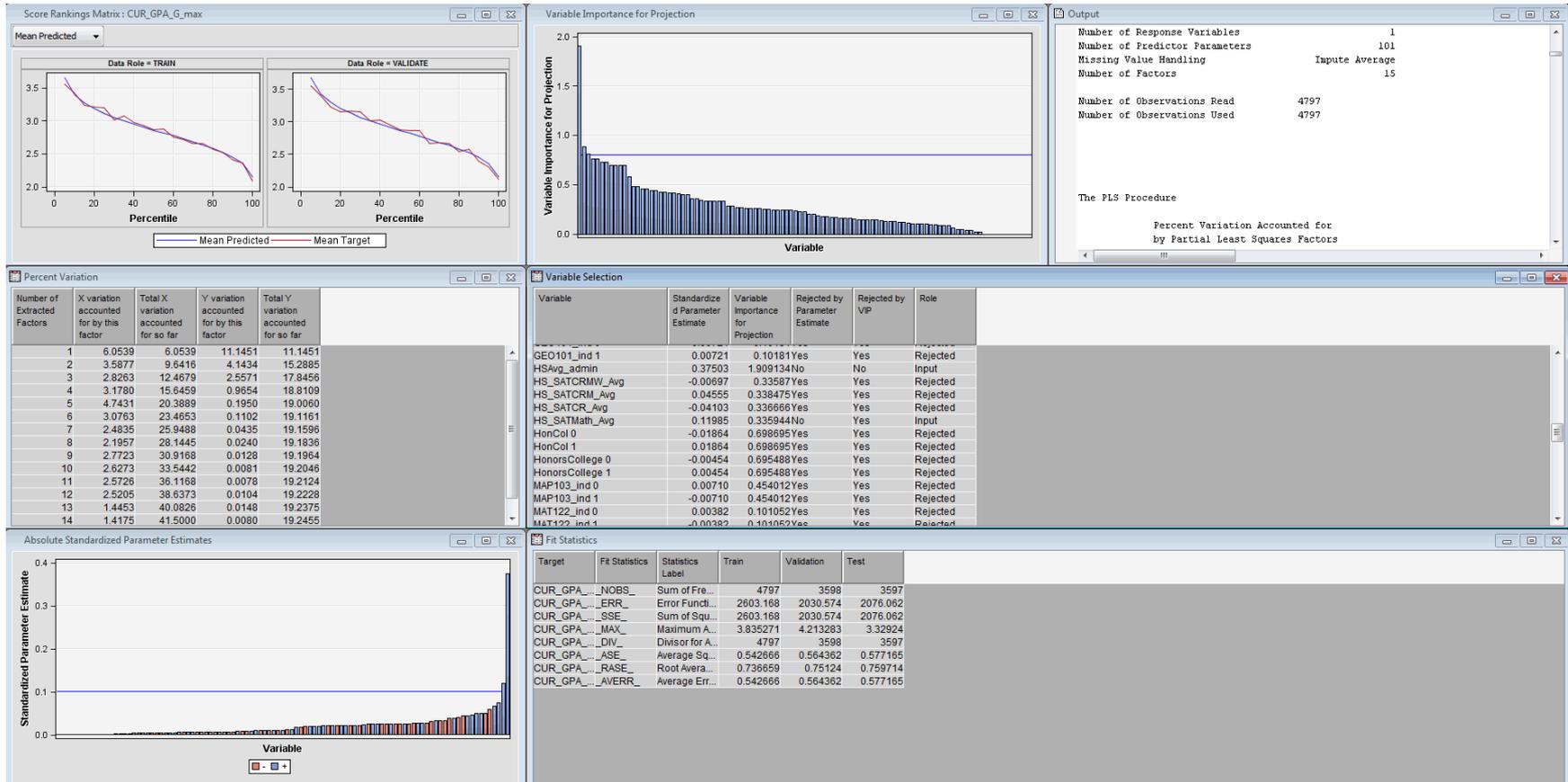
Neural Network Model



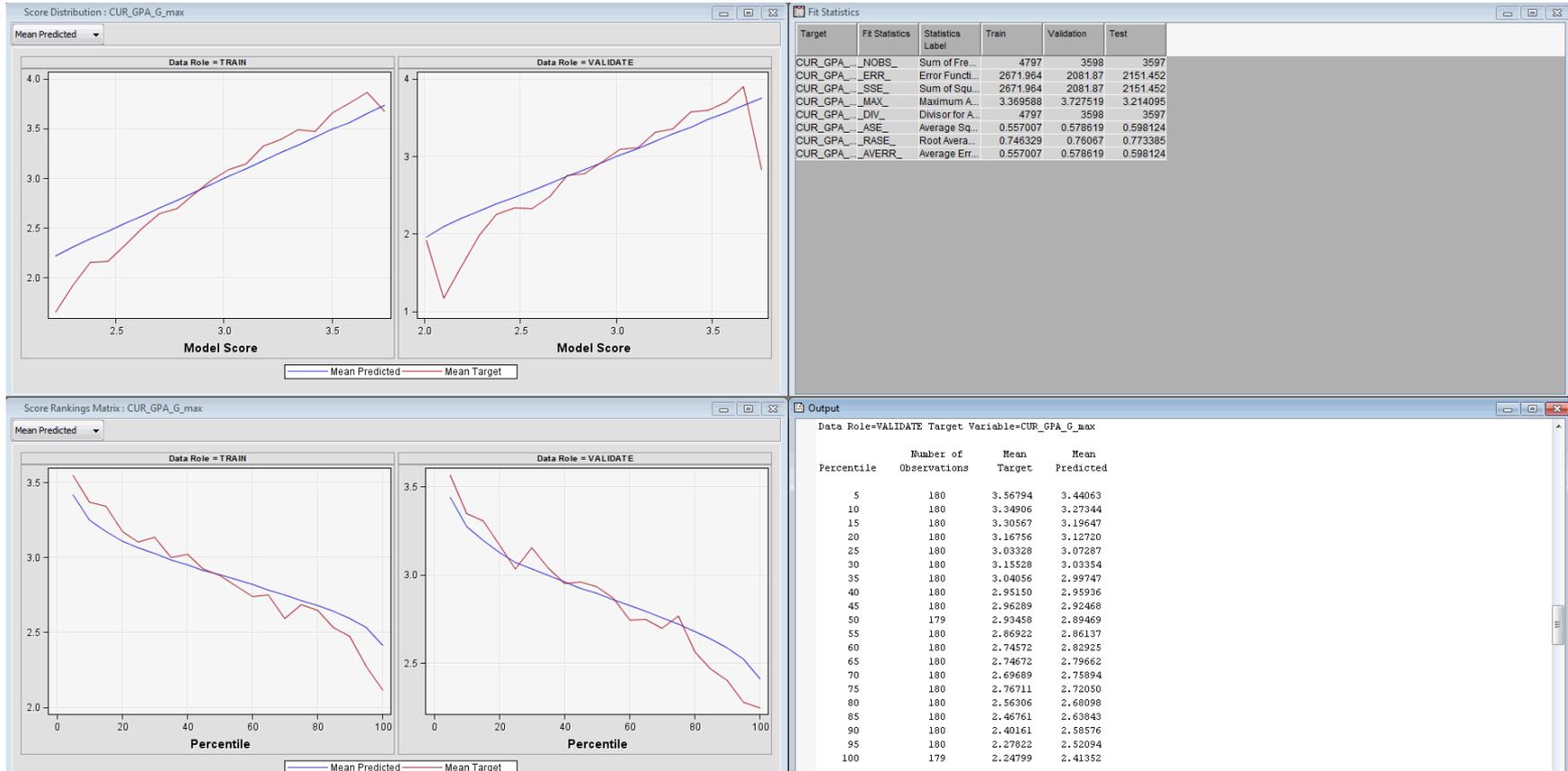
Dmneural Model



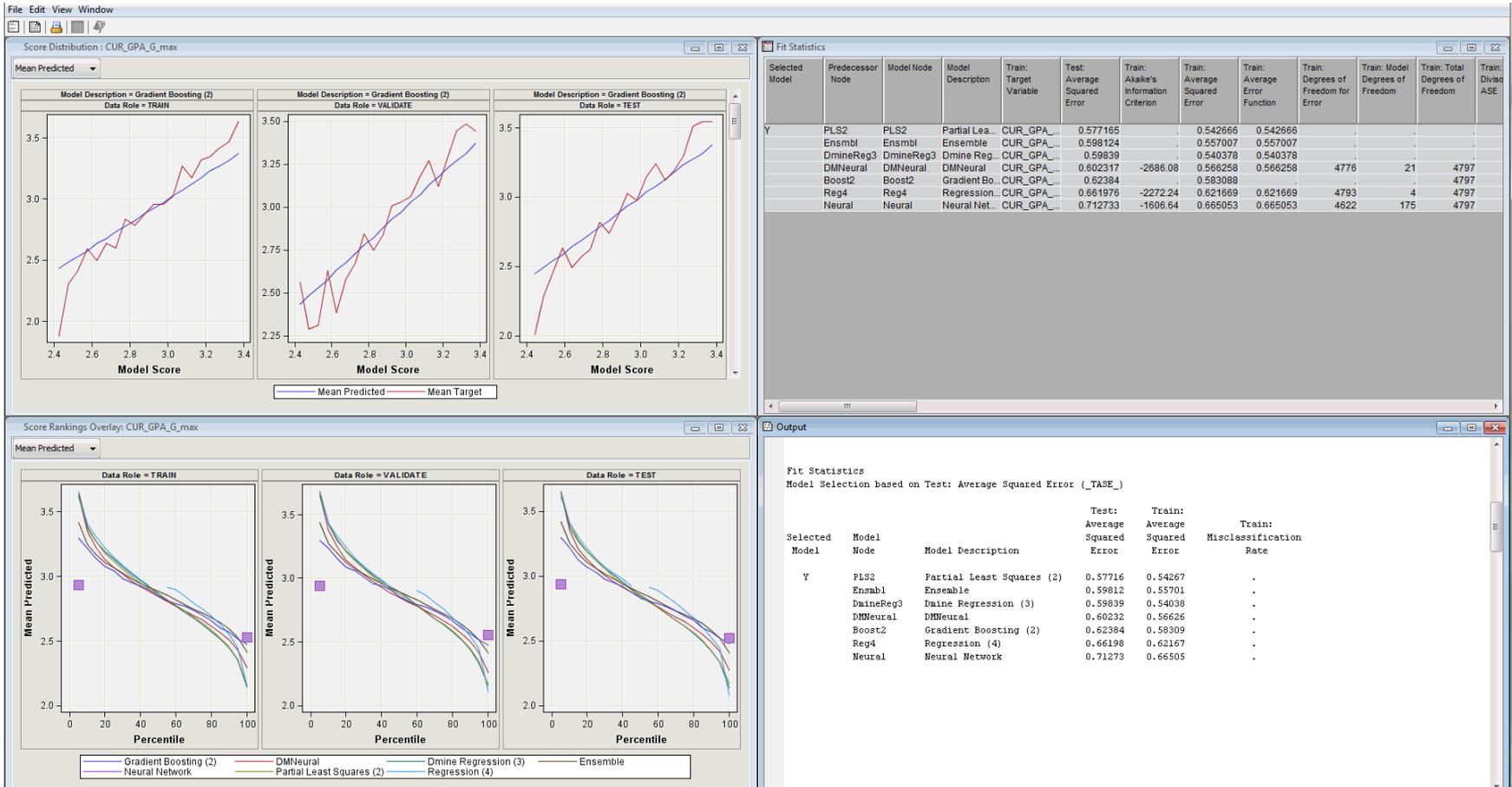
Partial Least Squares Regression Model



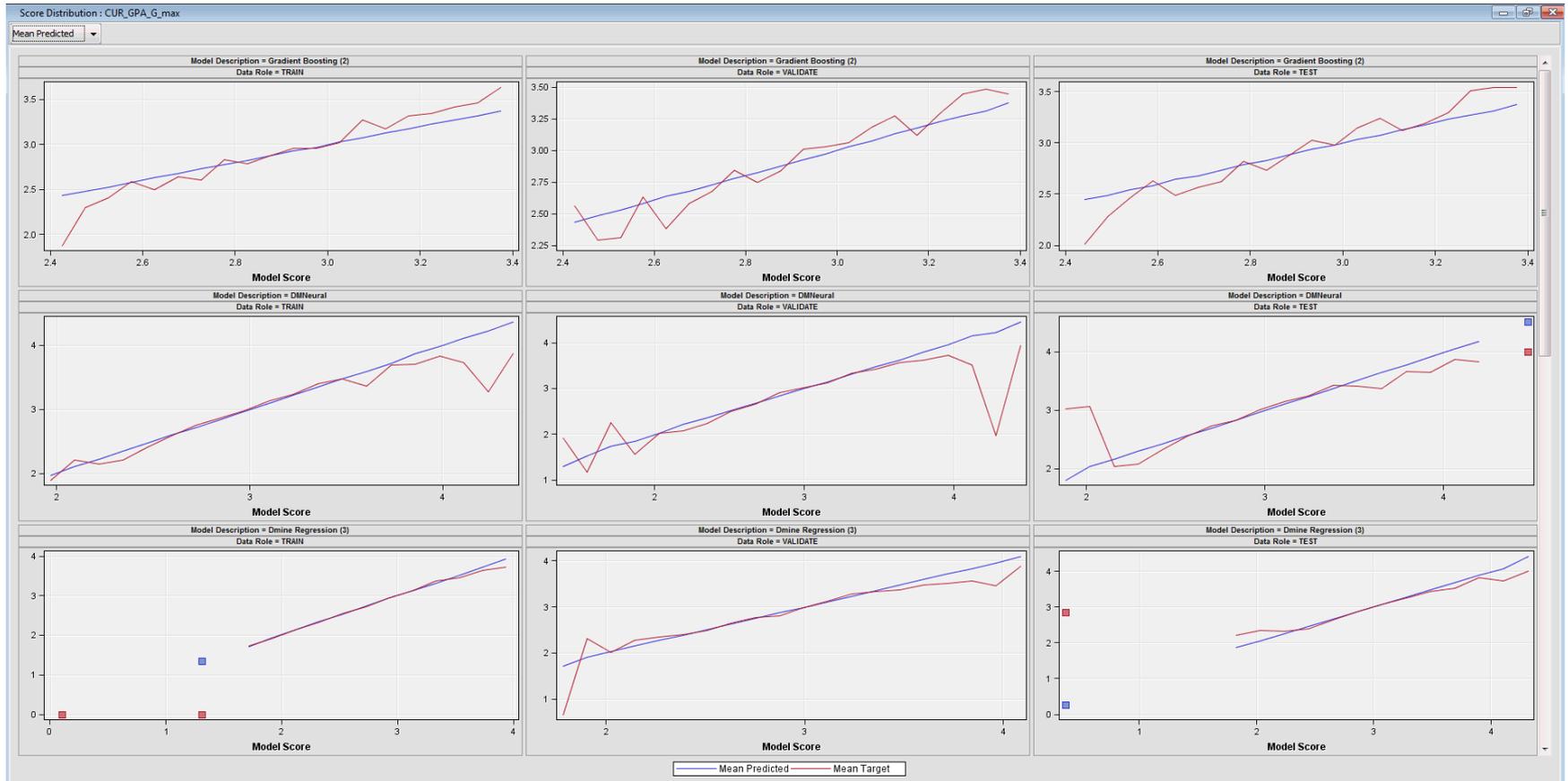
Ensemble Node Model



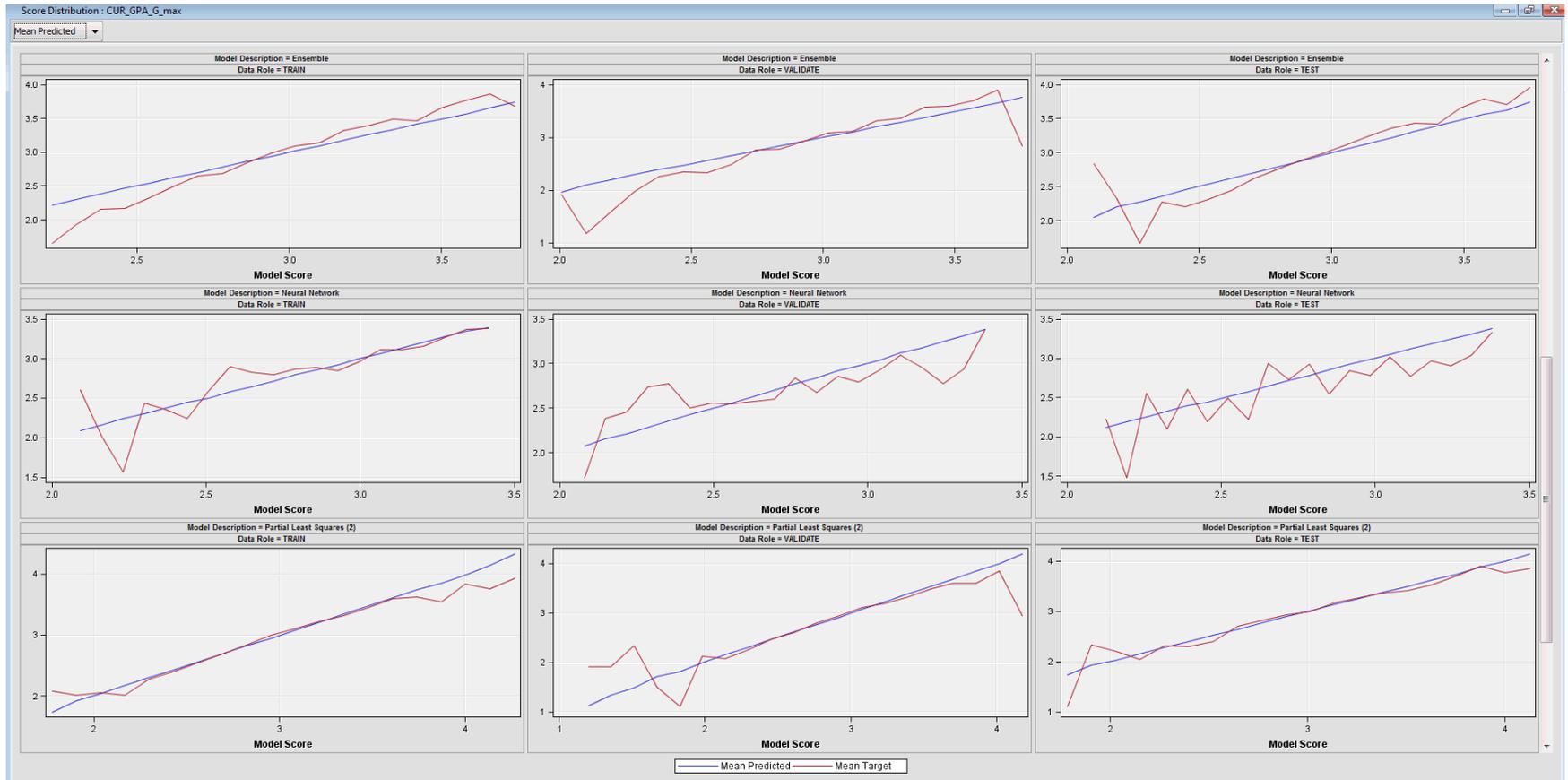
Model Comparison



Model Comparison Graphs 1



Model Comparison Graphs 2



Model Comparison Graphs 3



Score Node Output for Partial Least Squares Model

Interval Variable Summary Statistics

Variable Name=P_CUR_GPA_G_max

Statistics	Label	TRAIN	VALIDATE	TEST
MEAN	Mean	2.86	2.87	2.85
STD	Standard Deviation	0.36	0.37	0.37
N		4797.00	3598.00	3597.00
MIN	Minimum	1.70	1.12	1.72
P25	25th Percentile	2.61	2.61	2.59
MEDIAN	Median	2.84	2.85	2.82
P75	75th Percentile	3.08	3.11	3.08
MAX	Maximum	4.33	4.25	4.19

SAS Code

to Run Partial Least Squares Model on New Data

```
SAS Code
-----*
* EM SCORE CODE;
* VERSION: 6.2;
* GENERATED BY:;
* CREATED: 08NOV2013:17:57:52;
-----*
* TOOL: Input Data Source;
* TYPE: SAMPLE;
* NODE: Ids5;
-----*
* TOOL: Filtering;
* TYPE: MODIFY;
* NODE: Filter3;
-----*
if
(ANP120_ind ne 1)
and
(AthSpec ne 1)
and
(BIO202_ind ne 1)
and
(BIO208_ind ne 1)
and
(BUS215_ind ne 1)
and
(BusHonors ne 1)
and
(CSE114_ind ne 1)
and
(CSE219_ind ne 1)
and
(MAT127_ind ne 1)
and
(PHY126_ind ne 1)
and
(PSY201_ind ne 1)
and
( HSAvg_admin ne . and (50<=HSAvg_admin) and (HSAvg_admin<=100.5625))
and ( HS_SATCRM_Avg eq . or (954.94408061<=HS_SATCRM_Avg) and (HS_SATCRM_Avg<=2168.7996869))
and ( HS_SATCRM_Avg eq . or (651.95512788<=HS_SATCRM_Avg) and (HS_SATCRM_Avg<=1452.4089137))
and ( HS_SATCR_Avg eq . or (318.40163204<=HS_SATCR_Avg) and (HS_SATCR_Avg<=704.71311123))
and ( HS_SATMach_Avg eq . or (326.6460556<=HS_SATMach_Avg) and (HS_SATMach_Avg<=754.60076626))
and ( SATMATHSCORE eq . or (394.67703109<=SATMATHSCORE) and (SATMATHSCORE<=858.18385442))
and ( SATVERBALSORE eq . or (327.70521993<=SATVERBALSORE) and (SATVERBALSORE<=819.37579389))
and ( TOEFL eq . or (-51.76937262<=TOEFL) and (TOEFL<=59.873449069))
and ( mat_place eq . or (-1.121116279<=mat_place) and (mat_place<=9.5917572127))
and ( wrt_place eq . or (0.3400472882<=wrt_place) and (wrt_place<=6.0259726383))
then M_FILTER = 0;
else M_FILTER = 1;
label M_FILTER = 'Filtered Indicator';
-----*
* TOOL: Partition Class;
* TYPE: SAMPLE;
```

Model Package

