



SAS® Advanced Analytics

PhUSE 2018

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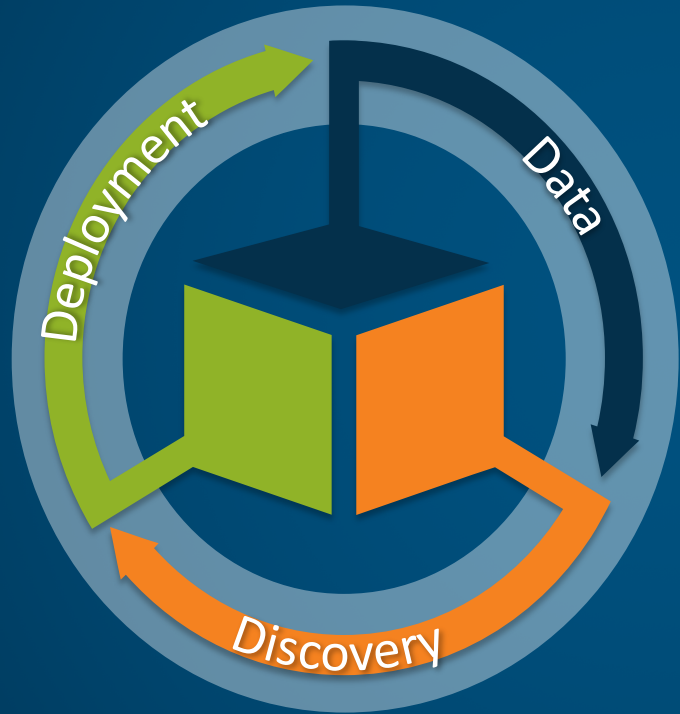


DATA



VALUE

Analytics Technology



DATA PREPARATION

VISUALIZATION

MACHINE LEARNING

TEXT ANALYTICS

FORECASTING

OPTIMIZATION

REPORTING

MODEL MANAGEMENT

DECISION MANAGEMENT

SAS Home

SAS® Drive - Organize and Share Content

New Data plan

Search

Quick Access

SAS Drive

Visual Sta...

Manage...

Build Mo...

Explore a...

All Projects Recent View Reports Develop SAS Code Prepare Data Build Models Manage Models Build Graphs

Filter: View Reports

Item Name

Date Modified

Start date:

End date:

Modified By (no fil...)

SAS Supplied

sas.SASVisualA...

Application Activity

CAS Activity

Disk Space

Infrastructure Da...

Message Queue ...

Retail Insights

System Activity

User Activity

Warranty Analysis

Water Consumpt...

Sort by: Name

View

Edit

Preview

Explore lineage

Add to Favorites

Pin to Quick Access

Add as shortcut

Move

Copy

Rename

Delete

Share...

Tag

Message Queue Activity

Summary

Comments

Show: Details

Type: Report

Modified by: SAS Supplied

Date modified: April 20, 2018 10:37:48 AM

Date created: March 27, 2018 03:32:22 PM

Location: SAS Content / Products / SAS Environment...

Shared with: (none)

Tags:

Data Preparation

SAS® Data Studio

Search

Jeff Stander

New Plan 1 * x +

Transforms

Add Transform

- Field Extraction
- Gender Analysis
- Identification A...
- Match Codes
- Standardize
- Multi-input Transforms
 - Append
 - Join
- Row Transforms
 - Filter
 - Transpose

Add a transform to the plan.

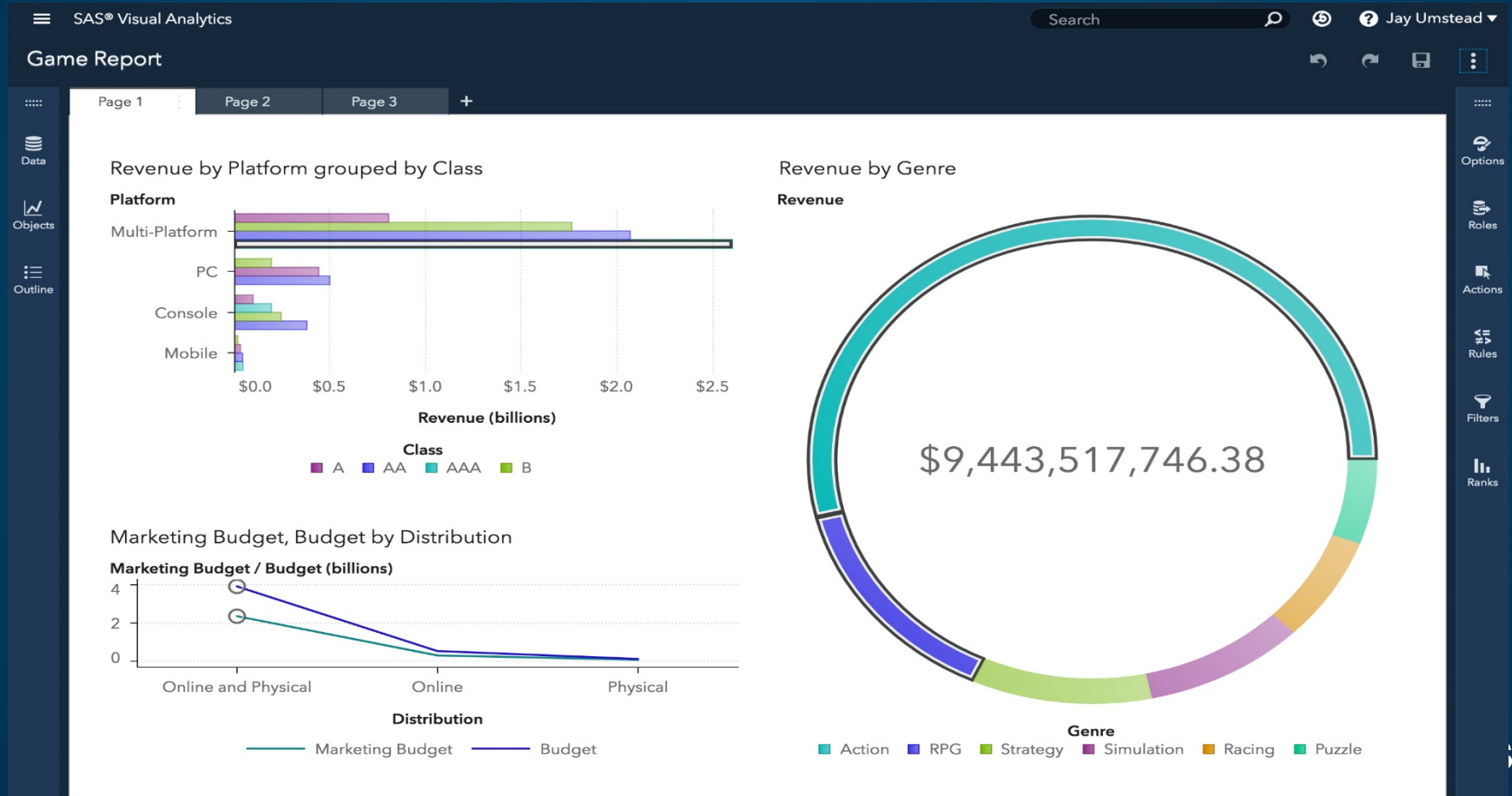
DQ_CONTACTS

Table Profile Metadata

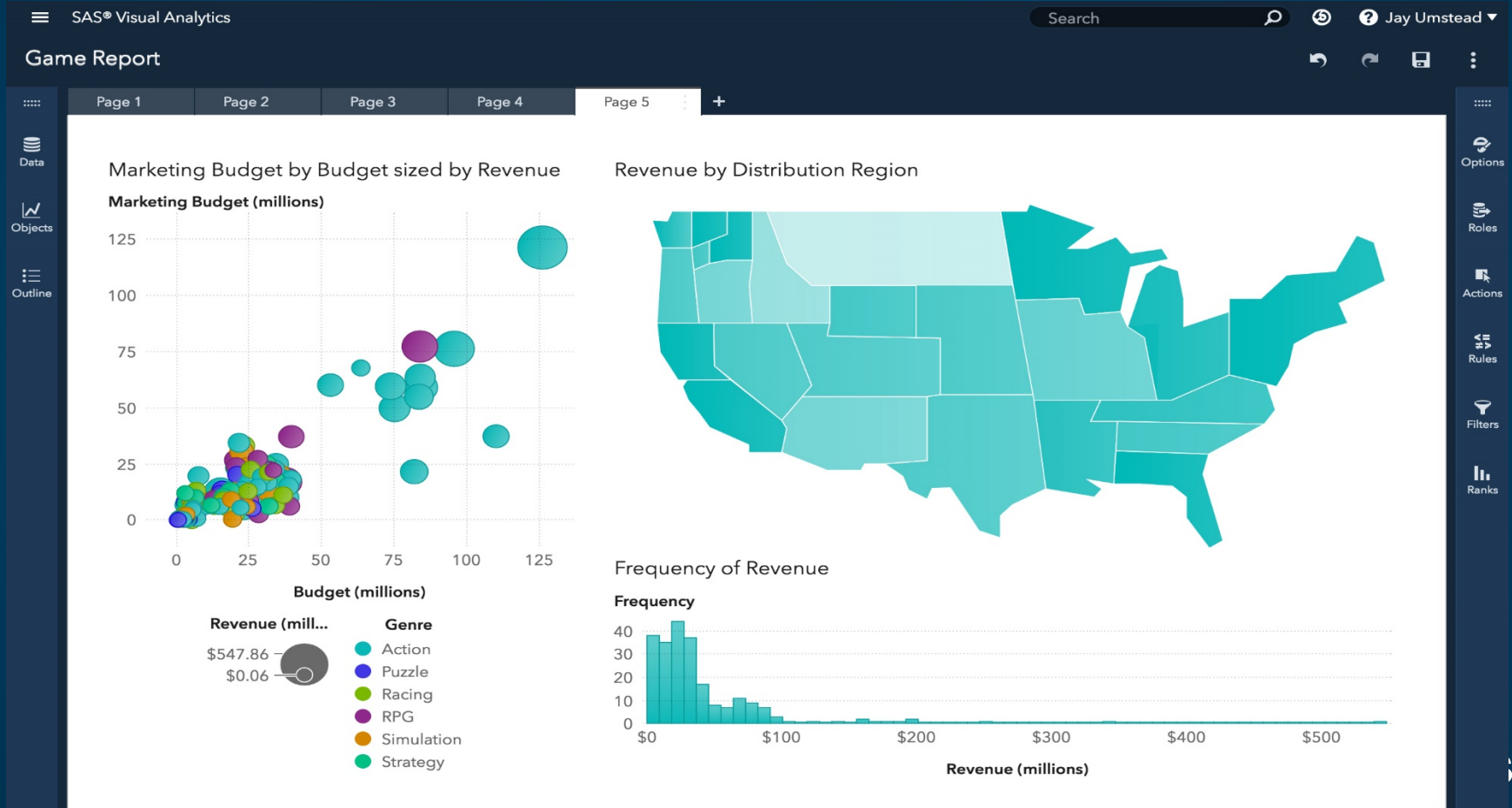
Sample rows: 100

Prefix	FirstName	LastName	Gender	City	State	Zip	
Mister	S. Robson	Walton	male	Benton	Arkansas	72716	6
MR.	Rext	Tillerson	male	Irving	Texas	75039	2
Mr	Johnny	Watson	boy	San Ra...	Calif	94583	2
Mr.	Tommy	Vilsack	dude	Washin...	District ...	20250	
Mr.	Georgey	Kirkland	Male	Sanramon	Calif.	94583	
Dr.	Arthur	Levinson	M	Cupertino	California	95014	2
Mr.	Jeffrey	Immelt	stud	Fair-field	Connec...	6828	

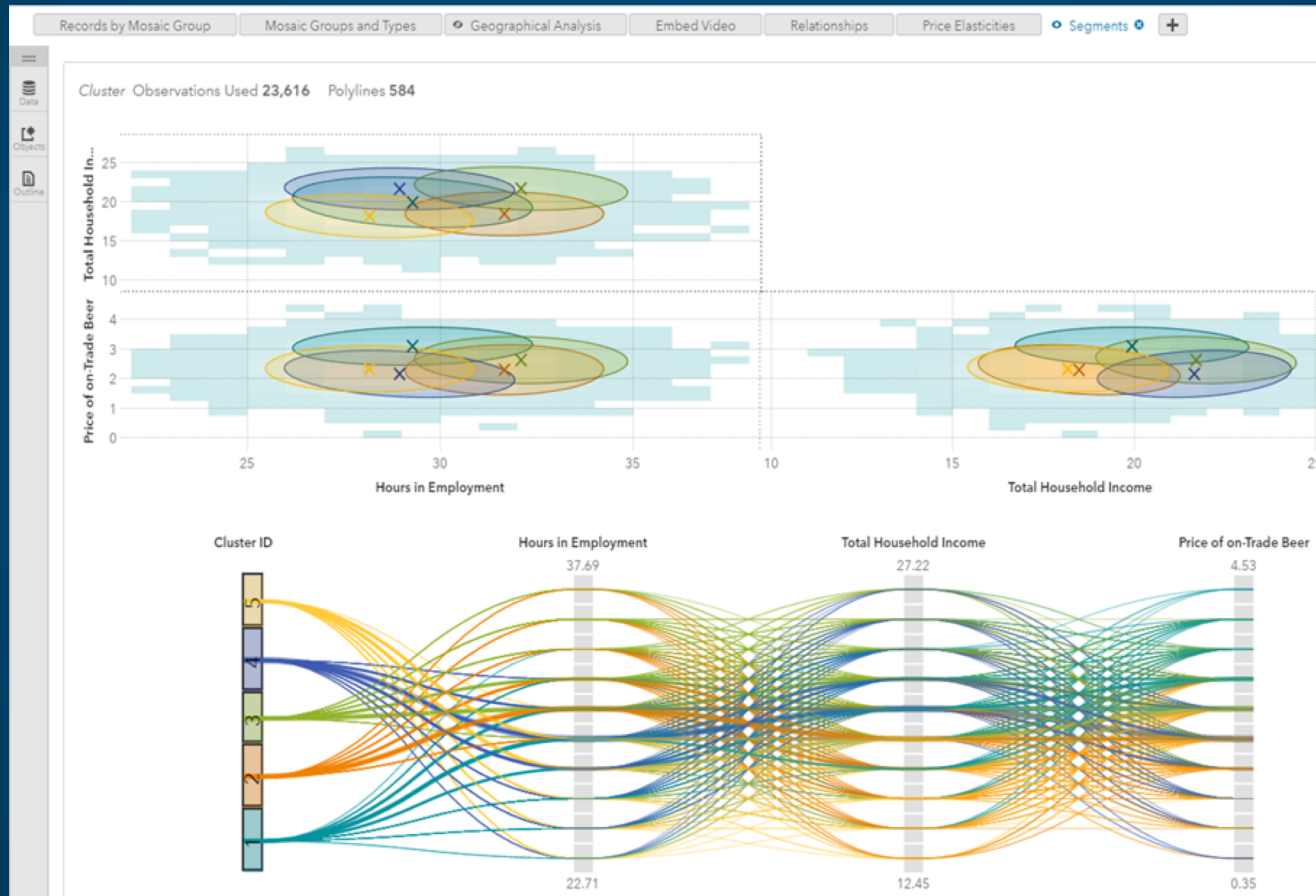
Visual Analytics Dashboard and Reports



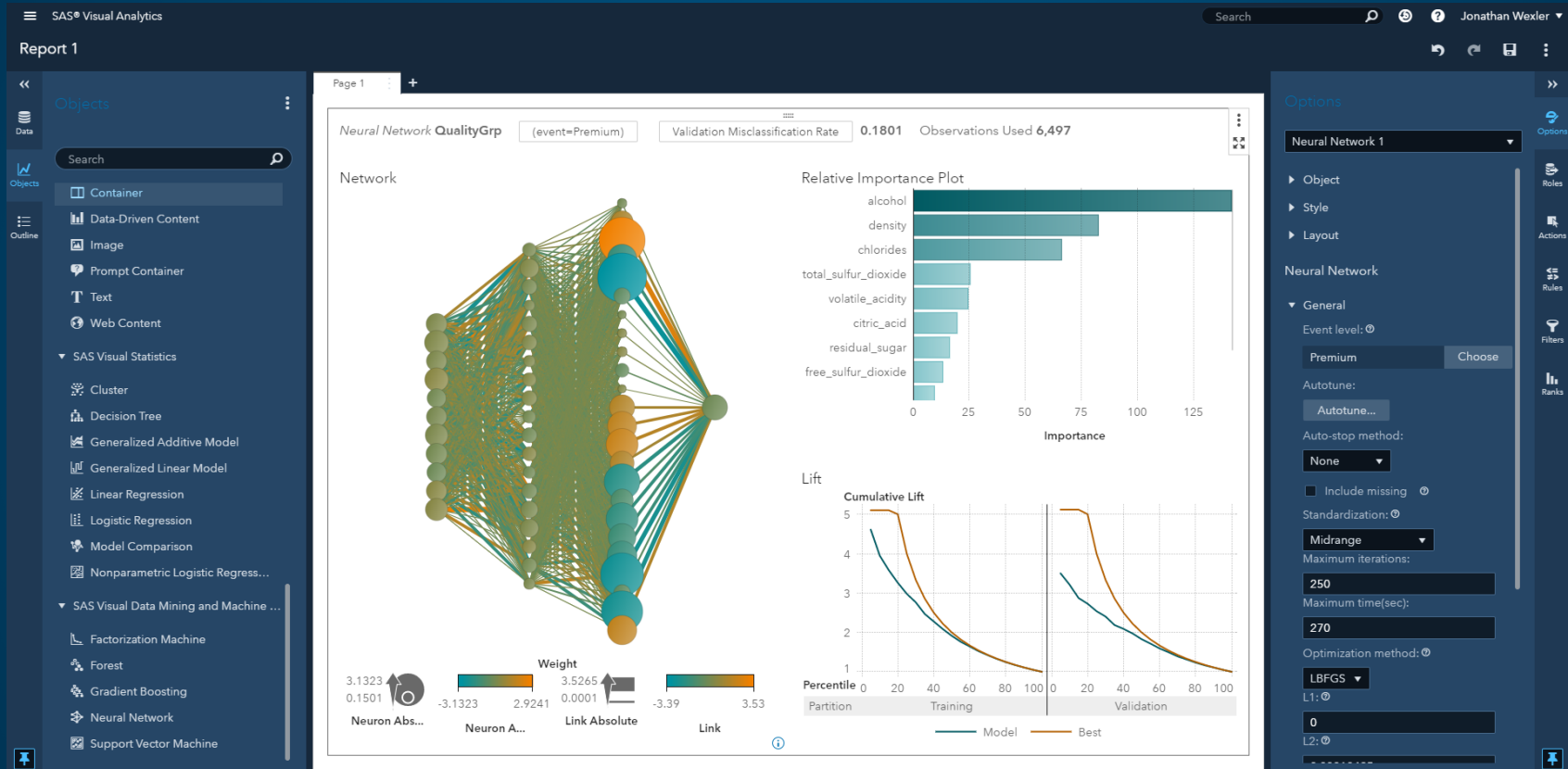
Visual Analytics Dashboard and Reports



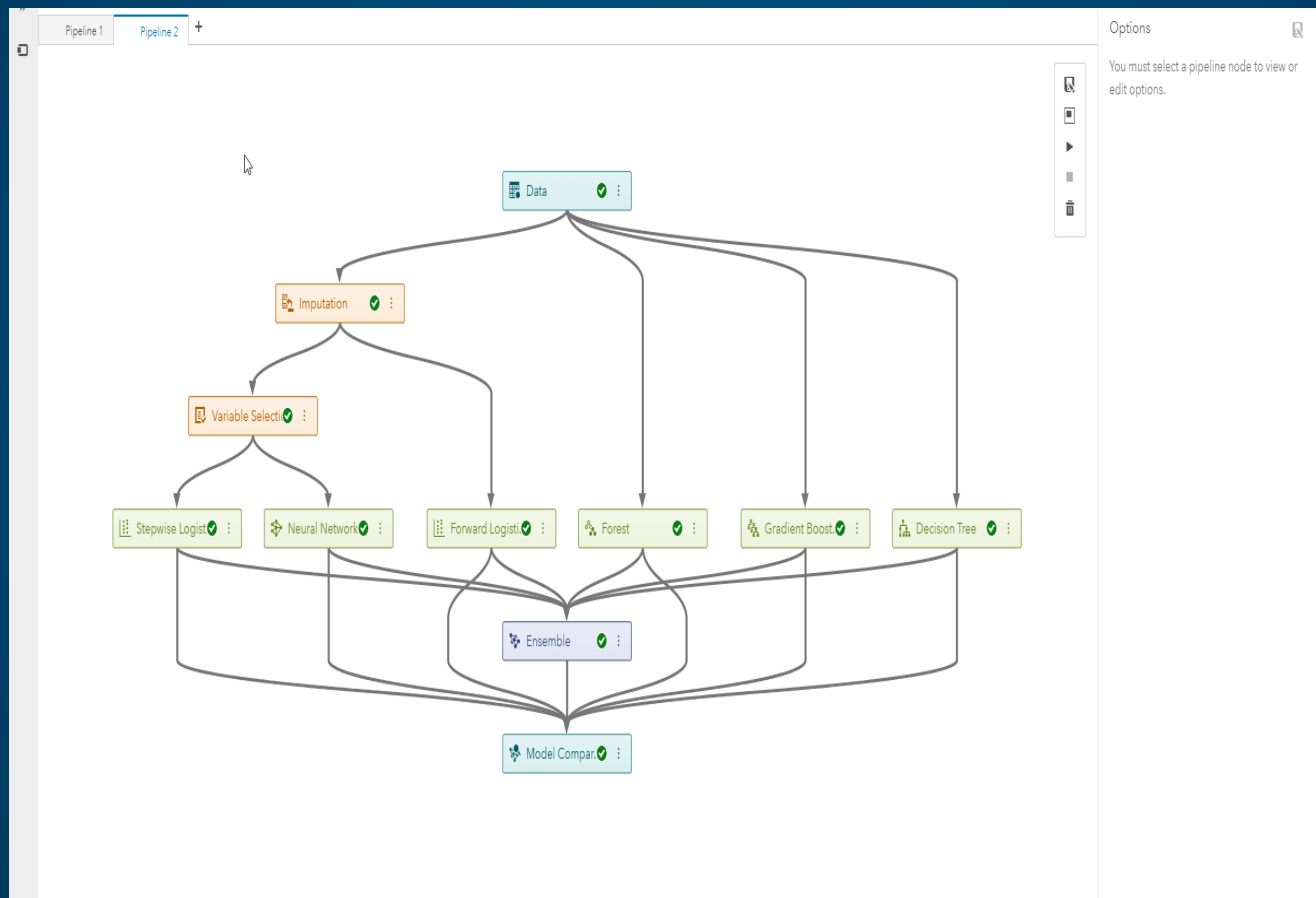
Visual Statistics



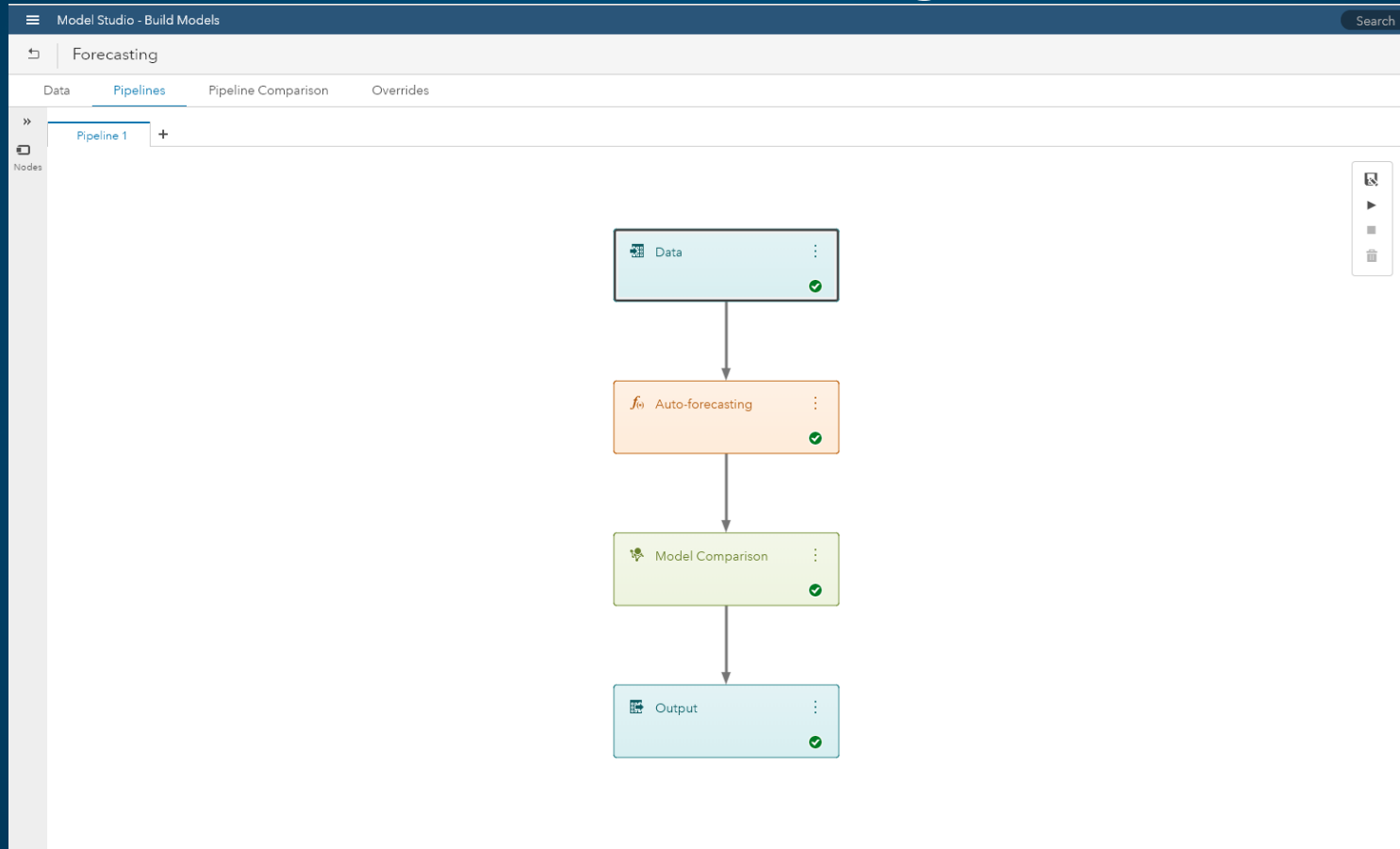
Visual Data Mining And Machine Learning



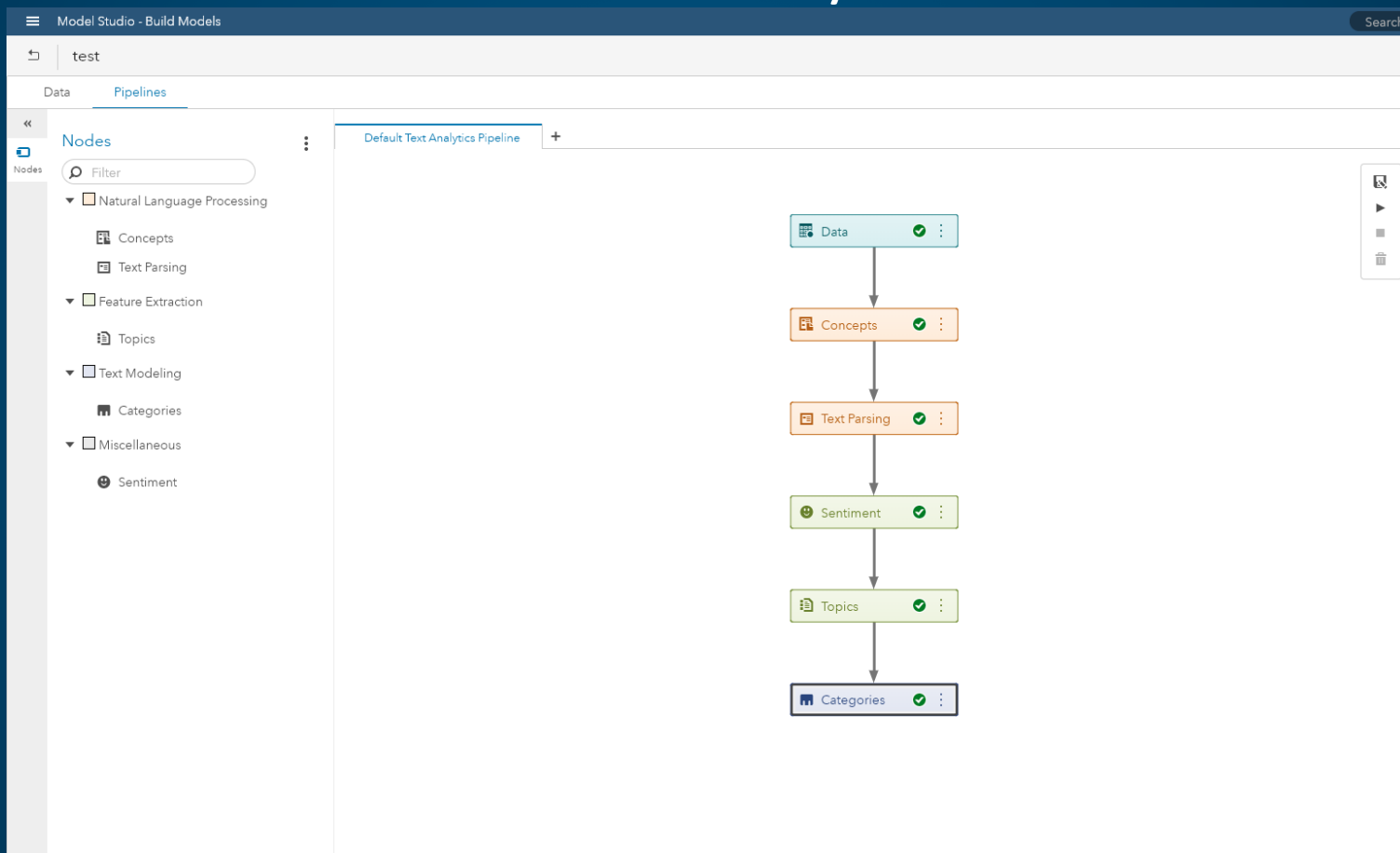
Visual Data Mining And Machine Learning



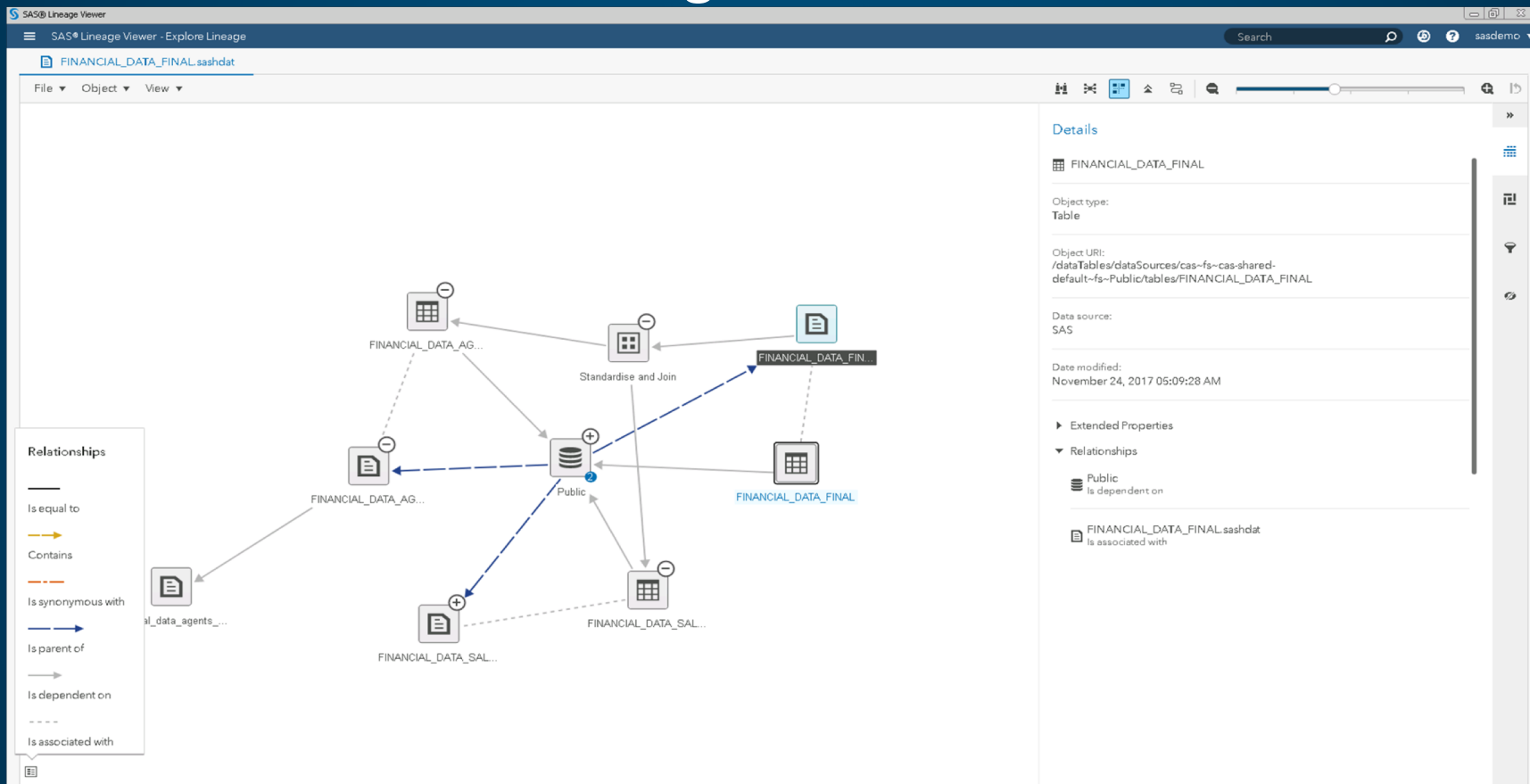
Visual Forecasting



Visual Text Analytics



Lineage Viewer



Multiple Programming interfaces

The image displays two software interfaces side-by-side. On the left is the Jupyter Machine Learning interface, showing a code editor with Python code for Gradient Boosting and a sidebar with file explorer and viewer. On the right is the SAS Studio interface, showing a code editor with SAS code for connecting to a CAS server and running a data step, along with a sidebar for server files and folders.

Jupyter Machine Learning

```
In [67]: gb = sess.decisionTree
         table={
           "name": "hmeq_part",
           "where": "strip(pu)"
         },
         inputs=all_inputs,
         nominals=class_vars,
         target="bad",
         nTree=10,
         nBins=20,
         maxLevel=6,
         varImp=True,
         casOut={"name": "gb_"}
         )

# Output model statistics
render_html(gb)

# Score
sess.decisionTree.gbt
table={"name": "hmeq",
      "modelTable": {"name": "casOut", "name": "_score", "copyVars": ["bad", "pu"]}}

# Create p_bad0 and p_score
sess.dataStep.runCode
code=""data _score
p_bad0=1-p_bad1;
)
```

SAS Studio

Server Files and Folders

- Folder Shortcuts
 - Home
 - casuser
 - sasuser.viya
 - Viya Jupyter notebooks
 - ds2 in CAS.sas
 - Files (/)
 - bin
 - boot
 - dev
 - etc
 - home
 - cas
 - cloud-user
 - sas
 - sasdemo
 - sukdmg
 - sukilb
 - sukjhs
 - sukpdr
 - sukppj
 - sukrkn
 - suksel
 - turtui
 - lib

Program 1 x ds2 in CAS.sas x

CODE LOG RESULTS

```
1
2
3
4
5
6
7
8 cas mySession sessopts=(caslib=casuser timeout=1800 locale="en_US");
9
10
11
12
13
14
15 caslib_all_assign;
16
17 %let inputdata=casuser.pivot_1m;
18 %let Nobs=9000000;
19
20 data casuser.pivot_1m;
21 drop i;
22 length Cust_Name $20;
23 do i = 1 to &nobs;
24   month_id = floor(rand('Uniform')*12)+1;
25   month_visits = floor(rand('Uniform')*1000)+1;
26   month_amount = (floor(rand('Uniform')*1000000)+1)/100;
27   Cust_Name = "Name"||strip(mod(i,1000));
28 output;
29 end;
30 run;
31
32
```

SAS Accelerates the analytics lifecycle

Interactive



Programmatic



Automated



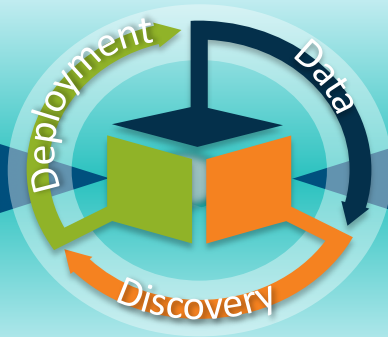
Modern



Open & Approachable



Decision & Model
Deployment



Data Preparation



Visualisation



Statistics &
Data Mining



Machine & deep
Learning - AI



Forecasting



Text Mining



Econometrics



Optimisation

