



SAS Visual Analytics 8

What's New?

Oct 2017



SAS Visualization Overview

SAS for Data Visualization

The basics.



VISUAL EXPLORATION



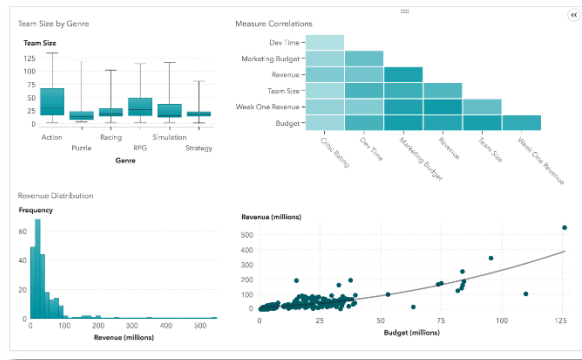
INTERACTIVE REPORTING



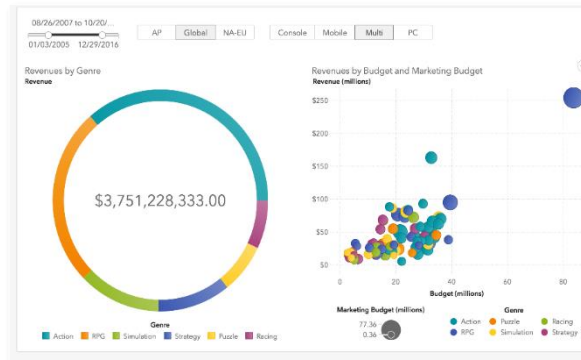
LOCATION ANALYTICS



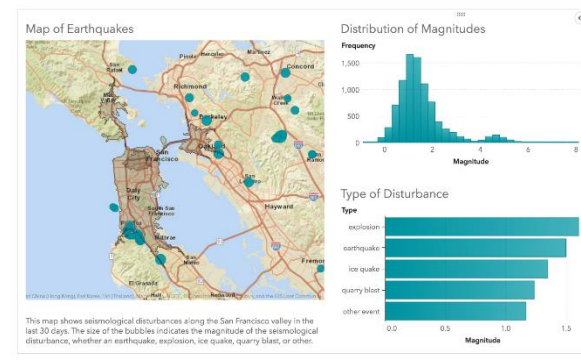
COLLABORATION & INFO SHARING



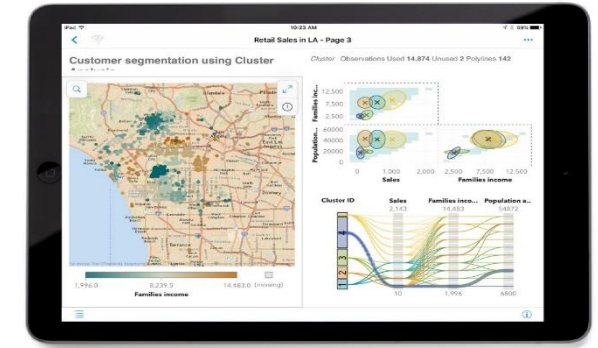
- Ad hoc exploration of data.
- Discover relationships, trends and outliers.
- Smart auto-charting.



- Create reports with precise layouts.
- Create dashboard.
- Interactive report filters and prompts.
- Distribute and share content with others.



- Embed geospatial visualizations.
- Interactive maps and visualizations.
- Drive-time analysis.
- Drive-distance analysis



- Design & publish interactive visualizations.
- Collaborate with team.
- Share via mobile device or MS Office.



SAS for Data Visualization

Extending the paradigm.



DATA
PREPARATION



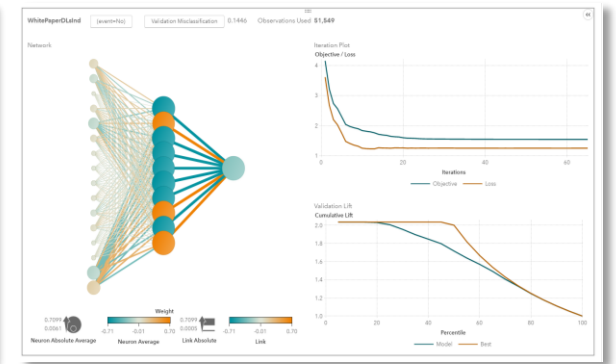
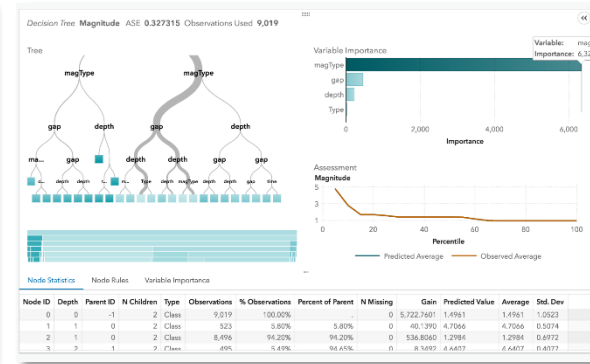
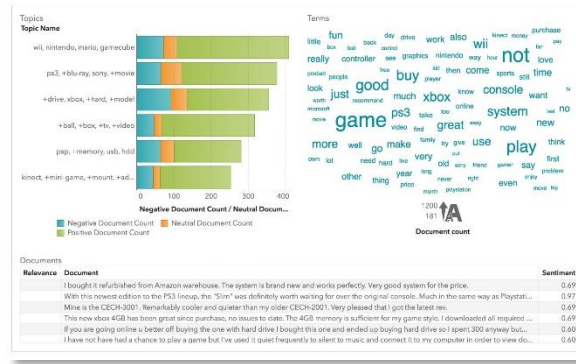
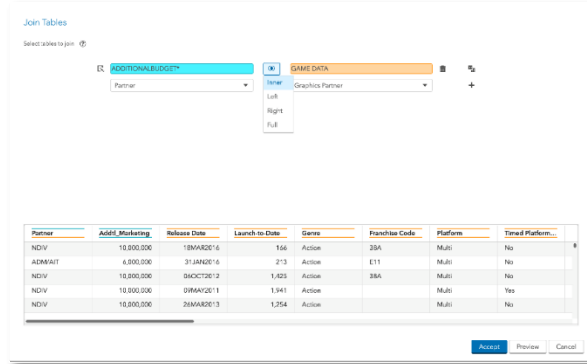
ANALYTIC
VISUALIZATION



INTERACTIVE
MODELING



MACHINE
LEARNING



- Access varied data sources.
- Profile data to look for issues.
- Filter data and engineer new features.
- Create new relationships in the data (joins).

- Specific visualizations for analytics insight.
- Descriptive statistics.
- Forecasting and scenario analysis.
- Decision trees.
- Text analytics.

- Linear & logistic regression
- Generalized linear model
- Classification trees
- Clustering
- Group-by processing
- Model comparisons (lift / ROC charts, misclassification tables)

- Unsupervised- and supervised-learning algorithms (principal component analysis, random forests, gradient boosting, neural networks and more)
- Automated model tuning
- Model assessment and scoring

SAS Visualization

Full Spectrum of Capabilities based on Role



Visual Analytics

Visual Statistics

Visual Data Mining and Machine Learning

Baseline Procedures

VS Procedures

VDMML Procedures

Baseline Action sets

VS Action sets

VDMML Action sets

SAS Studio

Program 1

```
1 data bmi_usa / view = bmi_usa;
2 set sashelp.heart;
3 BMI = round((weight*703)/height**2);
4
5 run;
6 proc means data=bmi_usa mean;
7 var BMI;
8 run;
```

RESULTS

Analysis Variable	BMI	Mean
		25.642274

NOTE: There were 5209 observations read from the data set. PROCEDURE MEANS used (Total process time):
real time 0.06 seconds
cpu time 0.04 seconds

SAS Studio UI

```
In [1]: import pylab
import random
random.seed(113)
samples = 1000
dice = []
for i in range(samples):
    total = random.randint(1,6) + random.randint(1,6)
    dice.append(total)

print "throw two dice", samples, "times."
print "Mean of", pylab.mean(dice)
print "Median of", pylab.median(dice)
print "Std Dev", pylab.std(dice)

pylab.hist(dice, bins= pylab.arange(1.5,12.6,1.0))
pylab.xlabel('Dice')
pylab.ylabel('Count')
pylab.show()

Throw two dice 1000 times.
Mean of 6.900
Median of 7.0
Std Dev 2.45397127123
```

R + Python API

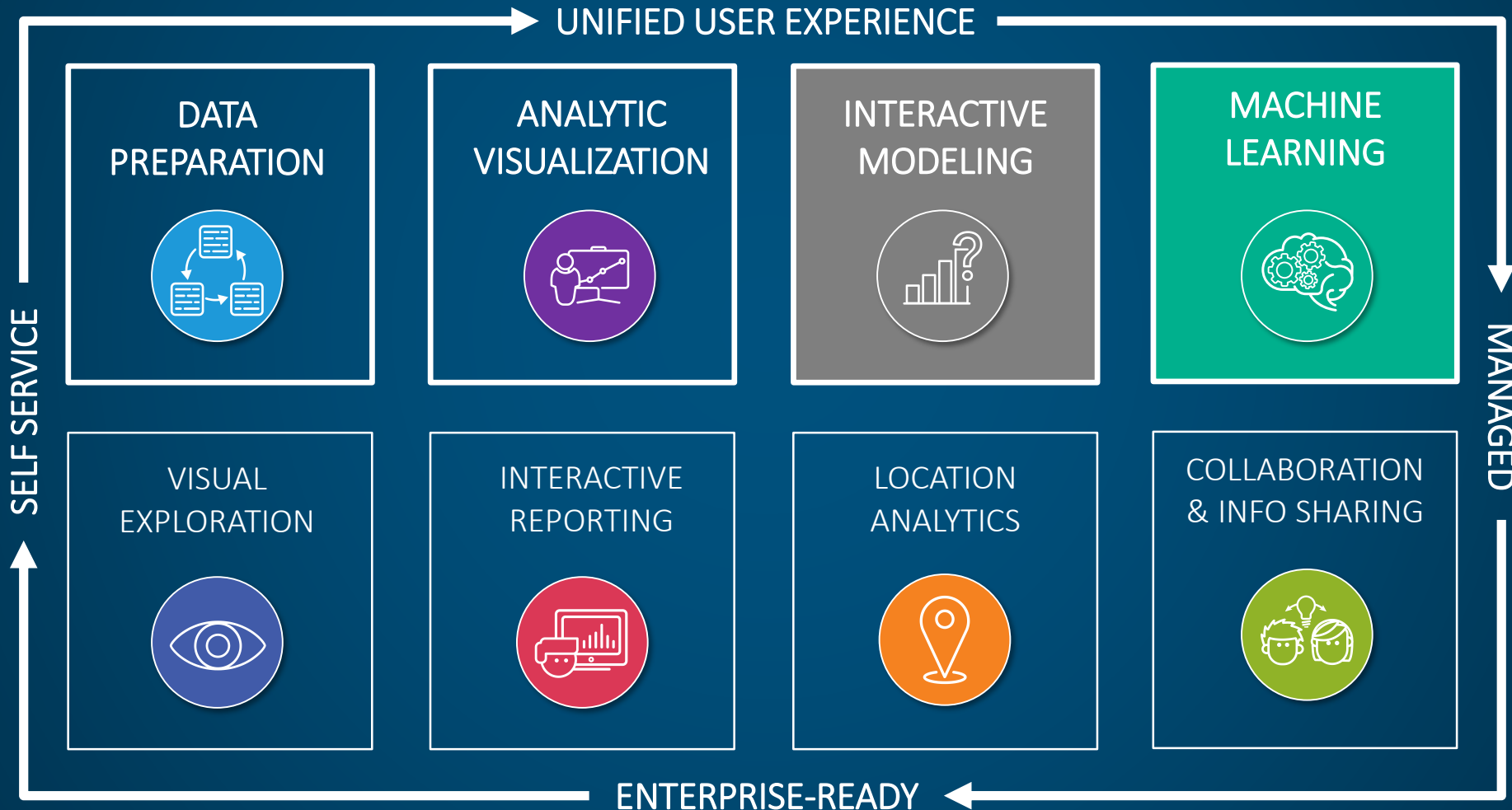
ipython

SAS Visual Analytics

SAS Visual Statistics

SAS Visual Data Mining
& Machine Learning

SAS for Data Visualization Offerings



Visual Analytics 8.2

COMING DECEMBER 2017!!

Resources

Where to get started

- VA 8.2 New Features - https://www.sas.com/en_us/software/visual-analytics/upcoming-features.html
- Tutorials:
 - Visual Analytics - <http://video.sas.com/#category/videos/sas-visual-analytics>
 - Visual Statistics – <http://video.sas.com/#category/videos/sas-visual-statistics>
 - VDMML - <http://video.sas.com/#category/videos/sas-visual-data-mining-and-machine-learning>
- Free 14-day Trial - https://www.sas.com/en_us/trials/software/visual-analytics/ep-form.html