





**When Everything is Data,
Discover What Matters!**

Udo Sglavo

Vice President,
Applied AI & Modeling





**Where SAS was
first created
which, you may
recognize as
Cox Hall**



**The first SAS
office which, you
may recognize on
Hillsborough
Street**



SAS is a
cloud native
data and AI
company ●

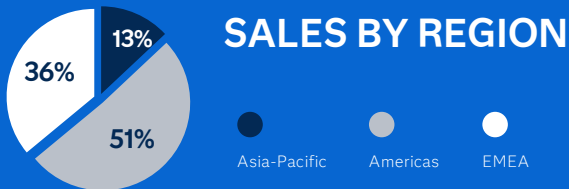
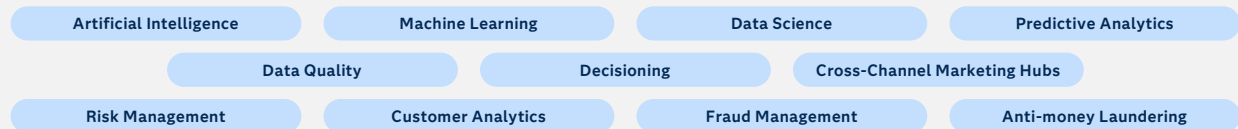
Five Decades of Innovation And Profitability



\$3bn+

SAS continues to record more than \$3bn in sales

ANALYSTS RANK SAS AS A LEADER IN



YEAR ON YEAR GROWTH



90%

**OF THE FORTUNE 100
(OR THEIR AFFILIATES)
ARE SAS CUSTOMERS**

Note: average count over the last five years

SAS PROUDLY SUPPORTS CUSTOMERS ACROSS INDUSTRIES INCLUDING



This summary includes amounts and percentages determined on a management reporting basis, which may differ from GAAP reporting.



Employees
12,000

Countries
140+

Customer Sites
70,000



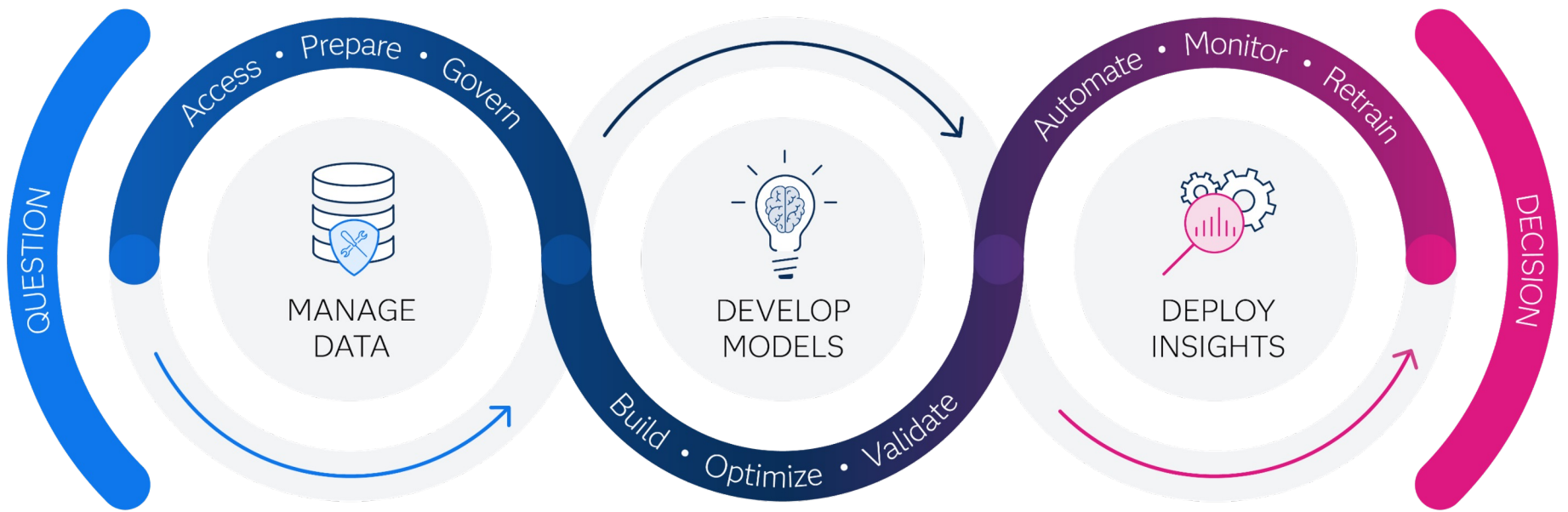
R&D Centers

4 US, China, India, UK

Partners

1700+







SAS® Viya® Workbench
Workbench
?

SAS® Viya® Workbench

World-class analytics on demand.

Environments New environment

Model Training ⋮

Primary Azure Data, Training Code Repository

Last opened: Mar 6, 2023, 9:57 AM by jdoe
 Compute size: 4 vCPU, 16GB RAM (default) ▾

Open Visual Studio Code ▾

Model Deployment ⋮

Primary Azure Data, Deployment Code Repo

Last opened: Feb 23, 2023, 11:36 AM by jdoe
 Compute size: 4 vCPU, 16GB RAM (default) ▾

Running Stop

Open Visual Studio Code ▾

HOW TO

Overview

Watch this video to learn about the capabilities in SAS Viya Workbench.

[Watch video](#)

Get Started

Create your first environment and learn how to get started with SAS analytics.

[View documentation](#)

Import Data

Learn how to import data, preview its schema, create a table, and query it in a notebook.

[Watch video](#)

Provide Feedback

Report any issues you are having or share your thoughts on how we can improve.

[Open feedback form](#)

SAS® App Factory

App Factory

SAS® App Factory
The definitive cloud-native platform for building analytics solutions

Applications View All [Create Application](#)

Patient ER Rates ⋮

ER Rate calculator

Functions: 3
Schemas: 1
Modified: 10 Mar 2024 12:55 PM

Transaction fraud detector ⋮

Functions: 1
Schemas: 2
Modified: 3 Mar 2024 7:12 AM

Patient ER Rates ⋮

ER Rate calculator

Functions: 1
Schemas: 1
Modified: 27 Feb 2024 12:06 PM

Medical Depot ⋮

Functions: 3
Schemas: 2
Modified: 12 Feb 2024 4:07 PM

Functions View All [Create Function](#)

aqueductUnsubscribe ⋮

Modified: 15 Feb 2024 1:23 PM

Draft

get_grades ⋮

Modified: 08 Feb 2024 3:48 PM

Staged

plotLanguages ⋮

Modified: 02 Mar 2024 2:36 PM

Staged

aqueductCreateCatalogItem ⋮

Modified: 05 Feb 2024 12:55 PM

Draft

RemuzziScore ⋮

Modified: 01 Feb 2024 7:12 AM

Staged

Schemas View All [Create Schema](#)

PatientDiagnostics: Diagnostic... ⋮

Libref: SCHNAM
Tables: 8
Modified: 10 Mar 2024 12:55 PM

Draft

RetailInventory ⋮

Libref: RTLINV
Tables: 5
Modified: 07 Mar 2024 1:22 PM

Staged

CreditScores_2023 ⋮

Libref: CRDSCR
Tables: 8
Modified: 27 Feb 2024 3:16 PM

Draft

RetailCustomerBehavior ⋮

Libref: RTLCSTBV
Tables: 5
Modified: 14 Feb 2024 12:52 PM

Staged

PharmaClinicalTrials: ⋮

Libref: PHRCLTR
Tables: 6
Modified: 04 Feb 2024 9:21 AM

Draft

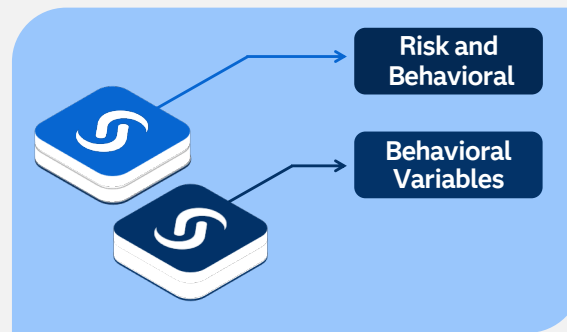




3 primary drivers: increased approval rates, reduction in false positives and improved fraud detection



Consumers



Models

Variables

↑ Approval Rate

↓ In False Positives

🔍 Improved Fraud Detection

Enhanced results

\$770K
monthly return

\$1.68M
fraud exposure reduction

\$2.45M
net monthly benefit

Tangible outcomes

April 16-19 | ARIA LAS VEGAS

featured speaker

“We’ve solved hundreds, if not thousands, of individual customer challenges. Models are how we productionize use cases on SAS® Viya.”

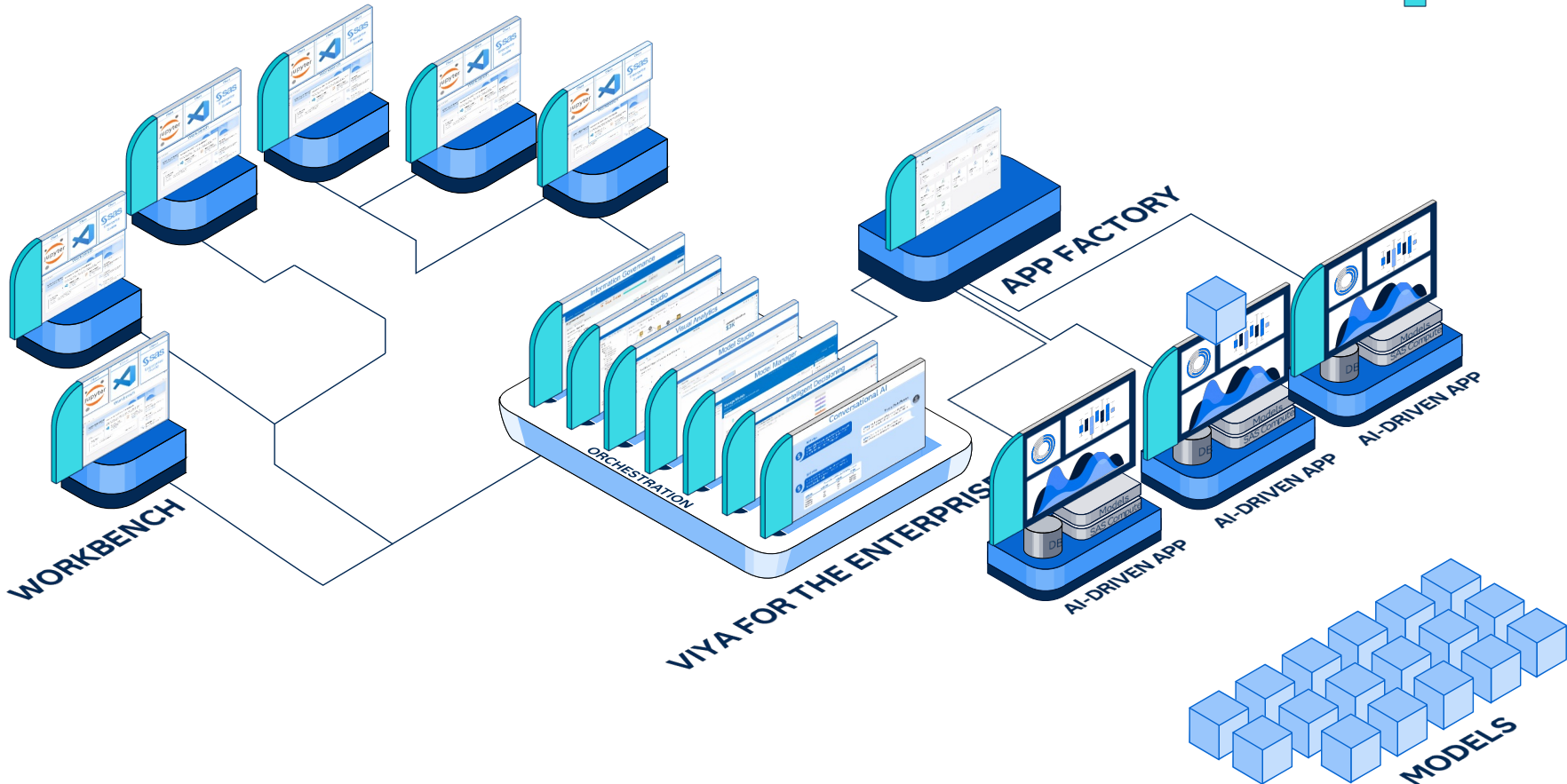
UDO SGLAVO

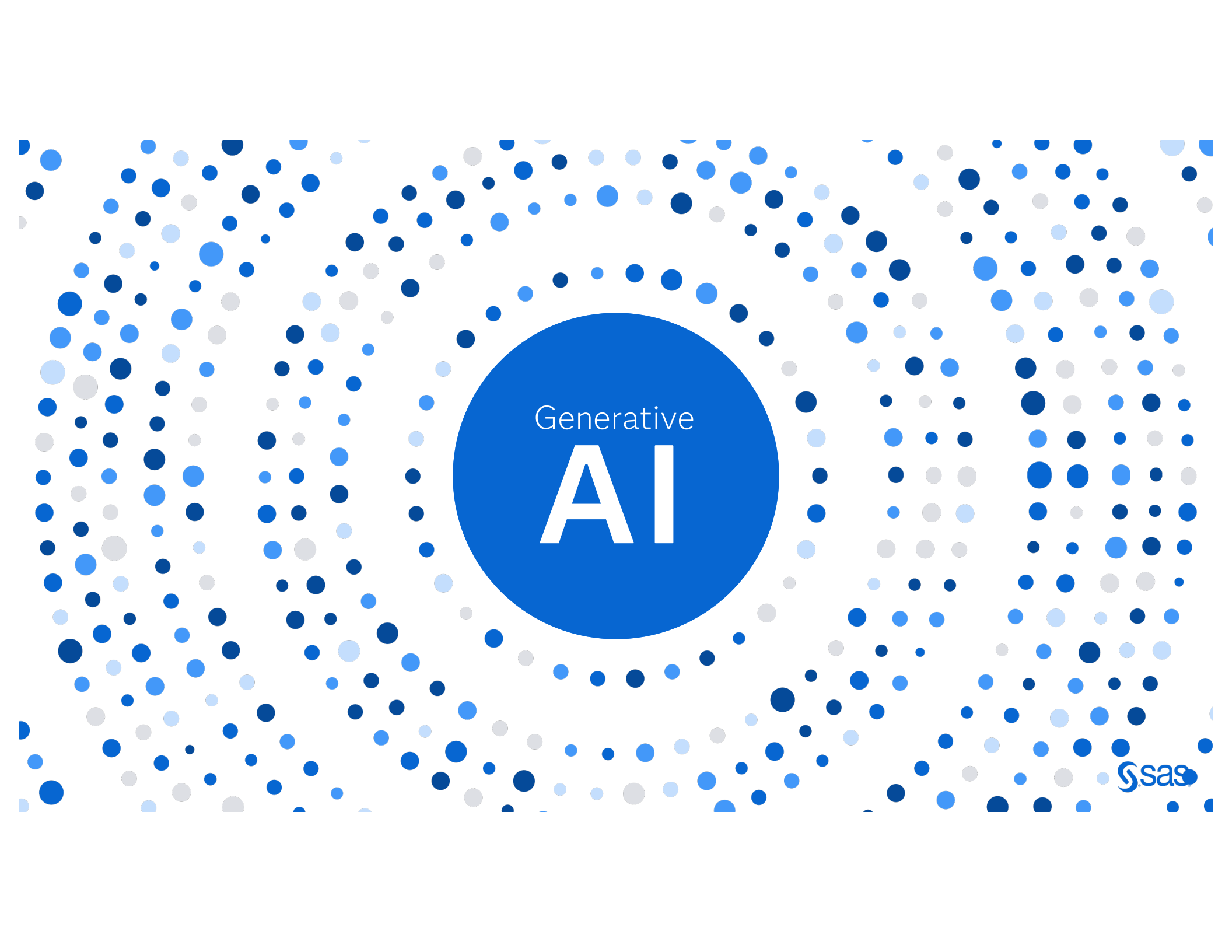
Vice President of Applied AI
and Modeling at SAS



sas innovate 2024

 = GenAI





Generative
AI

SAS and Generative AI

Data & AI Platform

Leverage LLMs at an Enterprise Level

SAS Viya enables the orchestration of LLMs usage, integration with decisioning workflows, machine learning and data protection capabilities.



Copilots

Accelerate AI Lifecycle Tasks

Use SAS Viya faster and easier, leveraging Copilots that democratize ALC tasks, for increased user productivity. Such as generate code, generate dashboards, run data quality checks.



AI Assistants

Execute Business & Industry Tasks

Empower individuals to do their job better and faster using AI assistants specialized in enterprise use cases across different industries.



Synthetic Data Generation

Mitigate Data Quality & Scarcity

Address and mitigate data privacy, data scarcity and bias challenges by generating and validating synthetic data in a programmatic or UI-driven form.



SAS and Generative AI

Data & AI Platform

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Copilots

Automatic SAS
code generation

Copilot.sas U ●

tmp-sas-copilot > testcode > Copilot.sas > ...

1

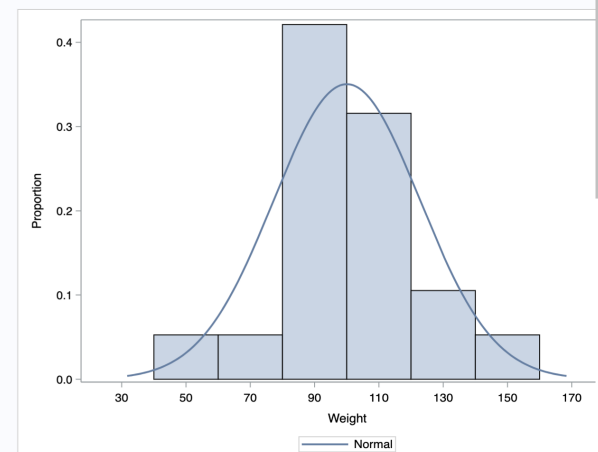


Brainstorm | [Generate code](#) | Explain | Add comments | Prompt

2

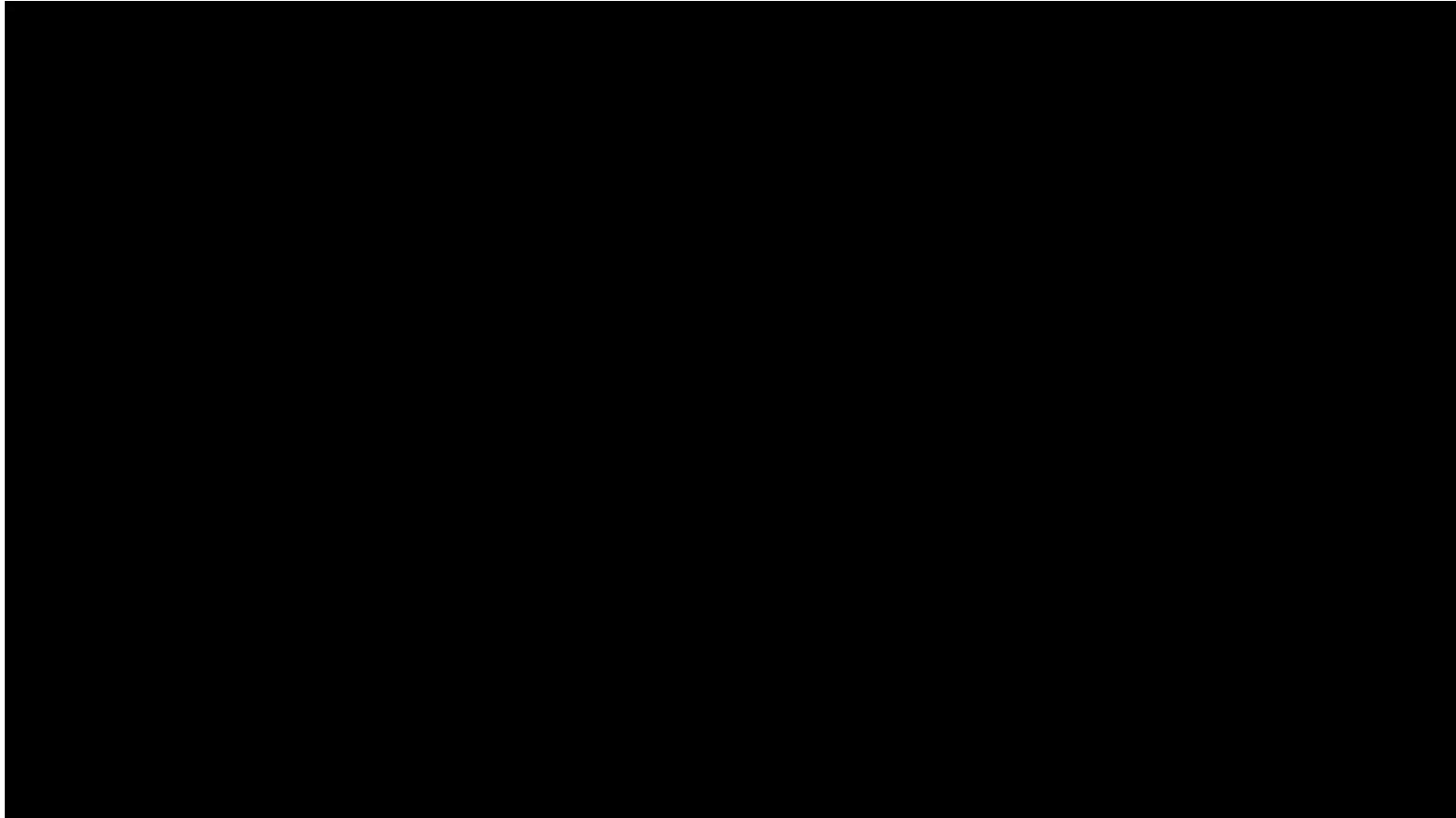
/ create histogram for weight, overlay normal distribution */*

```
Copilot.sas U ●
tmp-sas-copilot > testcode > Copilot.sas > PROC UNIVARIATE
24
25
26
27 /* create a normal distribution dataset */
28
29
30 /* Import the necessary library for drawing graphs */
31 proc sgplot data=sashelp.class;
32 /* Define the distribution plot and specify the normal distribution */
33 histogram weight / showbins scale=proportion;
34 density weight / type=normal;
35 run;
36
37 /* Import the necessary libraries for statistical analysis */
38 proc univariate data=sashelp.class noprint;
39 histogram weight / normal;
40 run;
41
42
43
44
45
```




The UNIVARIATE Procedure

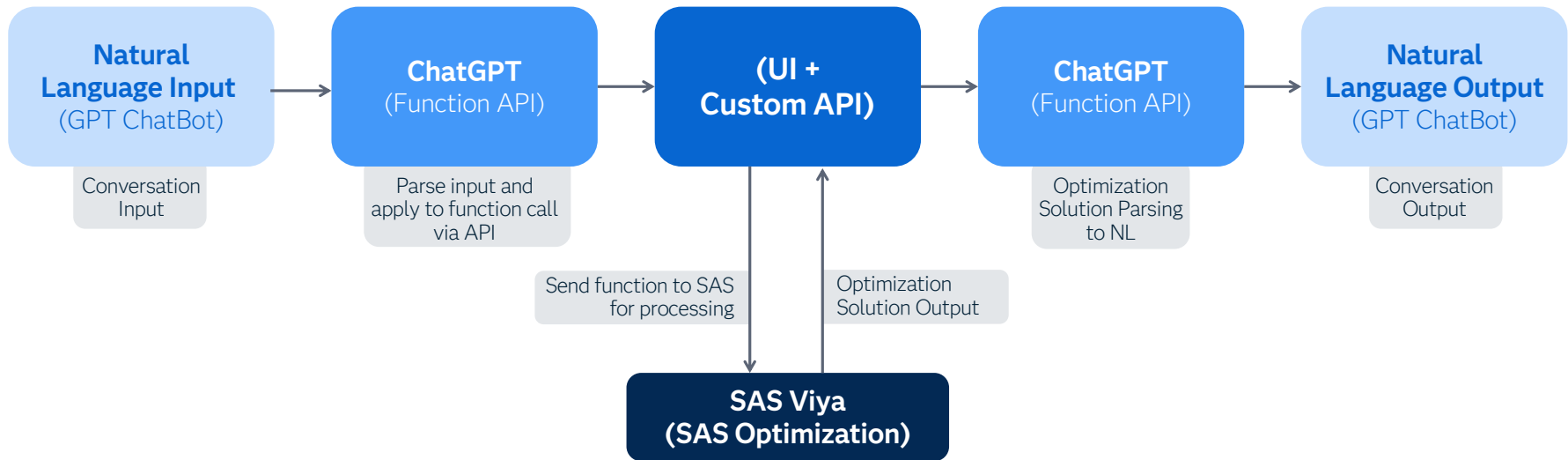
Copilot Demo – Jon Leirer, SAS



AI Assistant for Inventory Planning



 Digital assistant to democratize the use of SAS analytics across various personas by enabling them to interact with SAS analytics through conversation in natural language.



AI Assistant for Inventory Planning



AI Assistants to help with industry focused tasks

Chatbot Overage Chatbot Info

Hi there! What can you do for me?

Hi there! I'm a space planning assistant and I'm here to help you with SKUs, demand planning, and the tools present for you. What can I do for you?

Run space optimization for current week and summarize results

Space Optimization complete! We recommend moving out (HDC --> Overflow) a total of 607 materials [12,339 pallets], and moving in (Overflow --> HDC) a total of 47 materials [4,290 pallets]. Based on this recommendation, the HDC Utilization will change from 96.0% to 82.0%. Ask me if you would like a list of which items to move-in or move-out.

What are recommended ambient items to move out?

Based on the optimization model results and ONLY considering quantities greater than or equal to 100, we recommend moving out (HDC --> Overflow) 11 materials [2,051.0 pallets]. Here is the list of top 10 materials to move out:

Type a message... Submit

WEEK NUMBER: 38. [Click [here](#) for Visual Analytics Report]
 LAST UPDATE: Tue 28 Nov 2023, 12:02PM

SCENARIO SUMMARY: [Current Scenario: BaseScenario]

Scenario ▲	Util Before ▲	Util After ▲	HDC --> Overflow ▲	Overflow --> HDC ▲
BaseScenario	96.0%	82.0%	MATS: 607 [PLTS: 12,339]	MATS: 47 [PLTS: 4,290]

Synthetic Data Generation

Mitigate Data Quality and Scarcity

Prepare Source Data

Generate Synthetic Data

Explain and Validate Output

The screenshot displays the SAS Synthetic Data Generator interface. The top section shows the 'SOURCE DATA' for 'long_covid.dat' with 40 columns, 10K rows, and a size of 605.3kb. The 'SYNTHETIC DATA' section shows the 'Output table name' and 'Status: Set up'. Below this, there are tabs for 'Prepare Source Data', 'Select Synthetic Data Generator', and 'Evaluate Results'. A table lists variables with columns for 'Variable Name', 'Private Data', 'Type', 'Role', and 'Level'. The 'Private Data' column has a dropdown menu with options for 'Numer', 'Character', and 'Numer'. The 'Type' column has options for 'Numer', 'Character', and 'Character'. The 'Role' column has a dropdown menu with 'Input' selected. The 'Level' column has a dropdown menu with 'Interval' selected. Below the table, there are two heatmaps: 'Source Data - long_covid.dat' and 'Synthetic Data - LongCOVID.dat'. A tooltip indicates that 'LongCOVID.dat synthetic data has been generated'.

Quantum Computing

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Opportunities for Quantum Computing



Drug Discovery



Financial Modeling

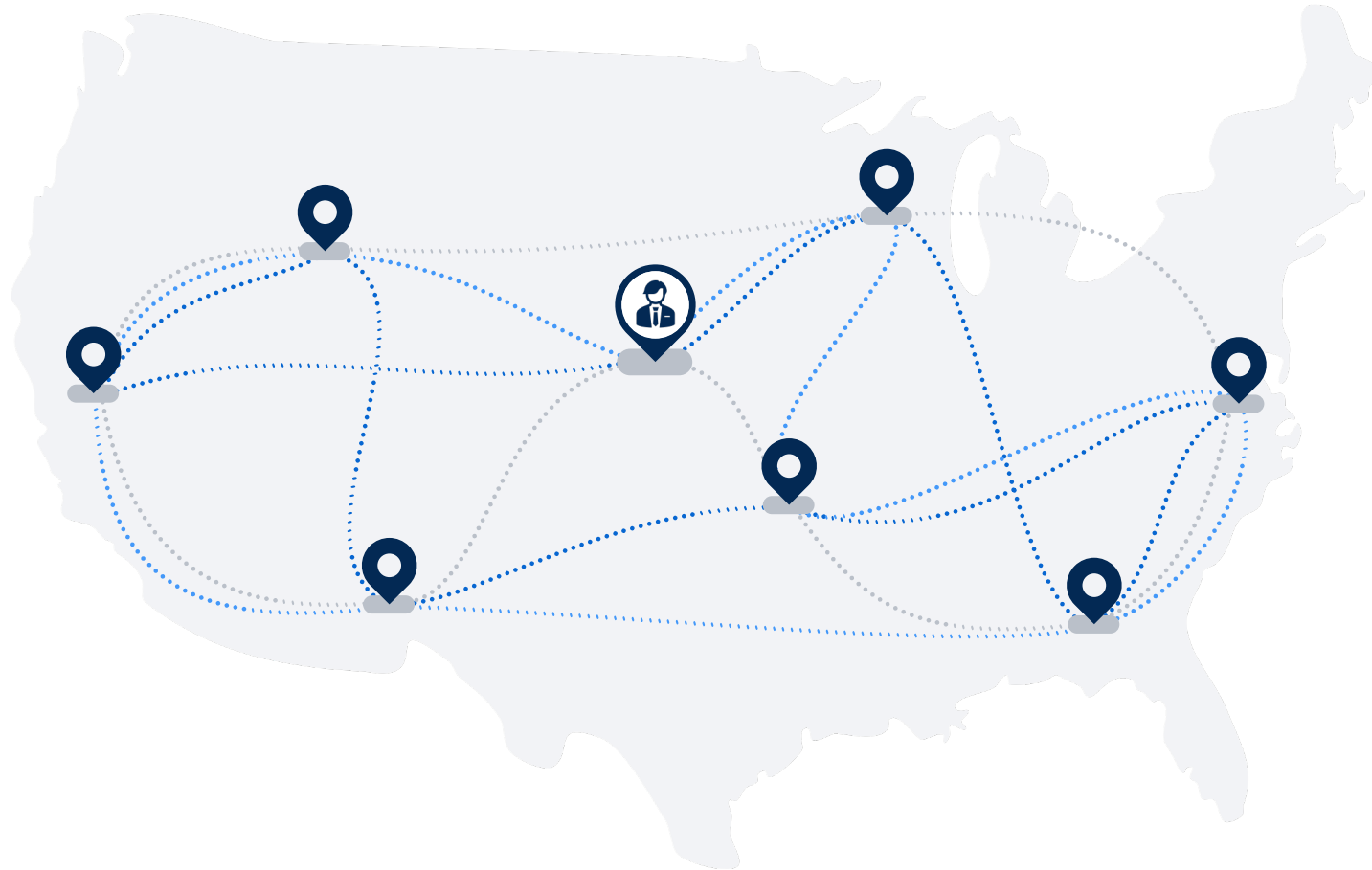


Chemical Simulations

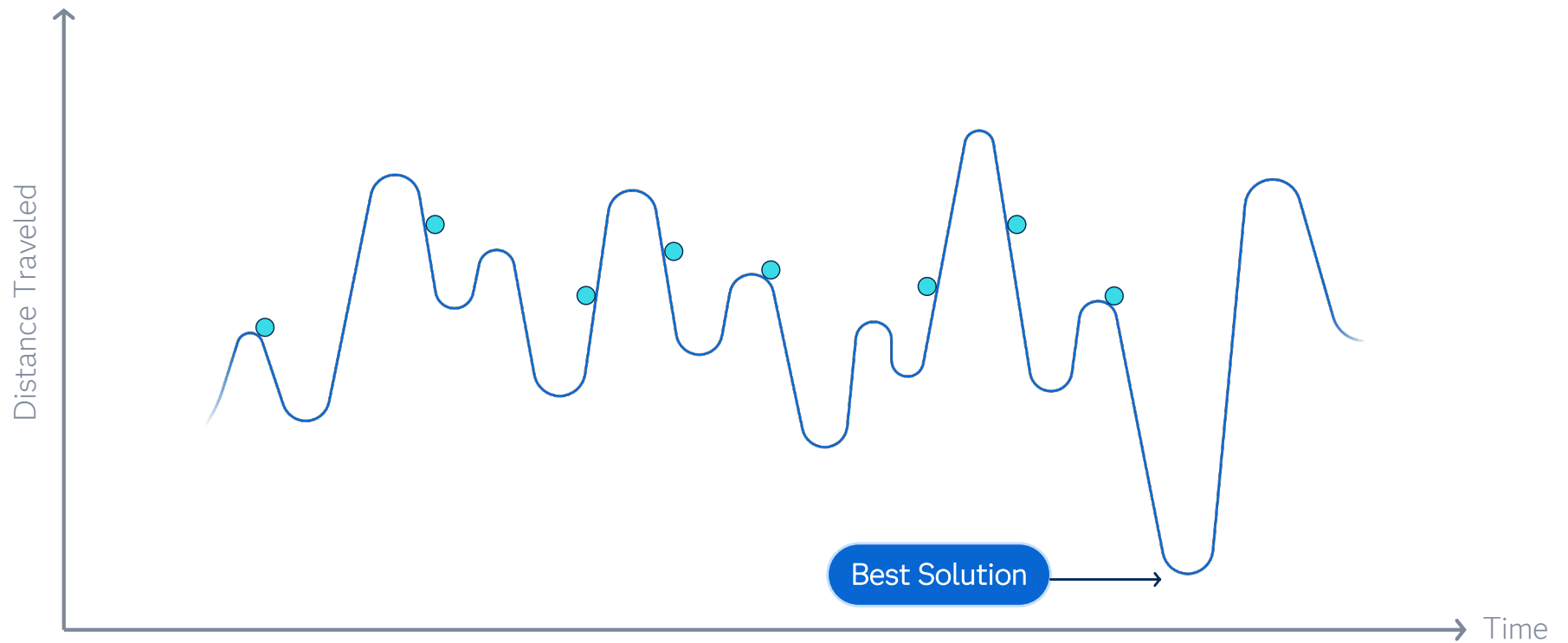


Optimization

Traditional Computing and Optimization

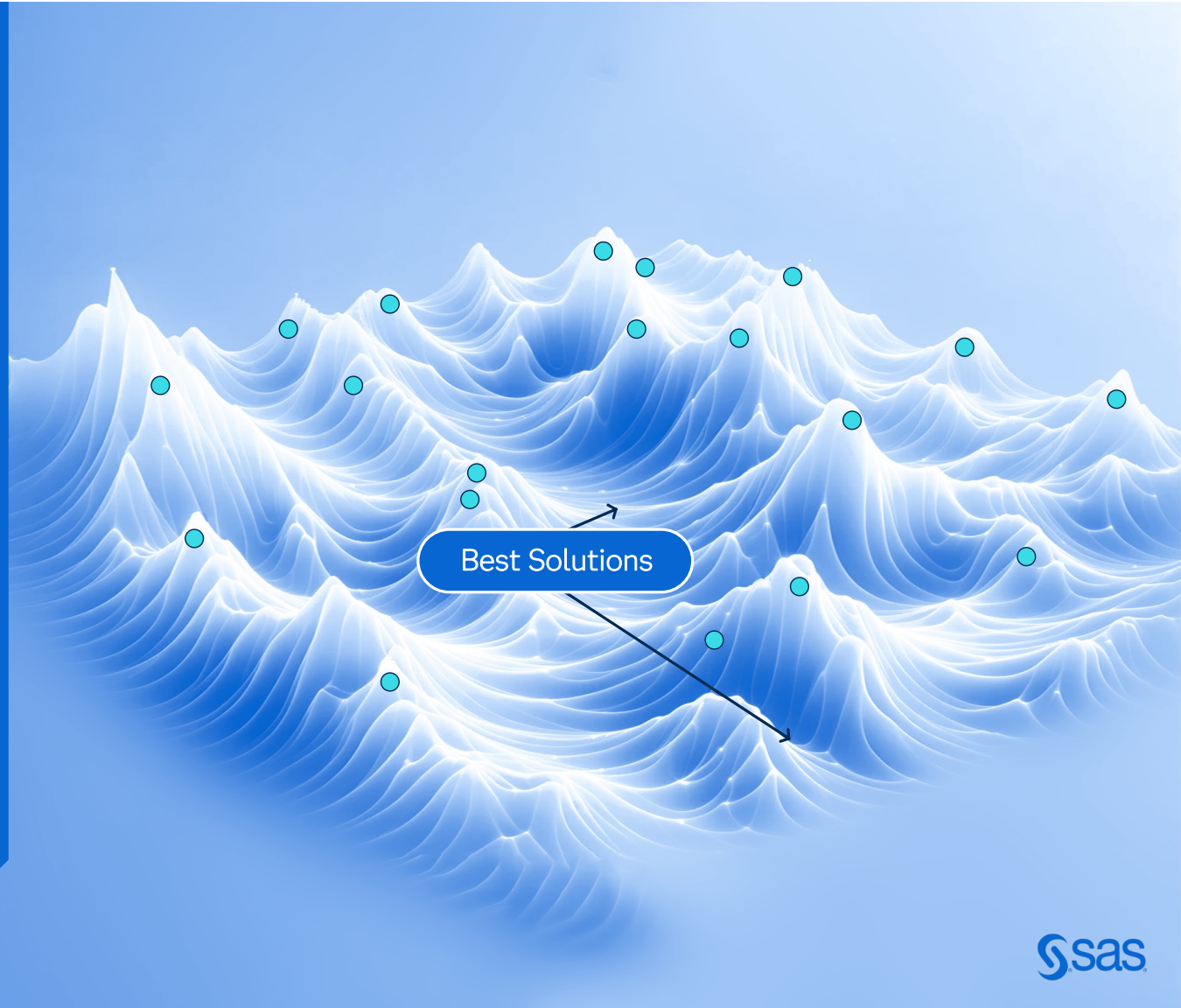


Traditional Computing and Optimization





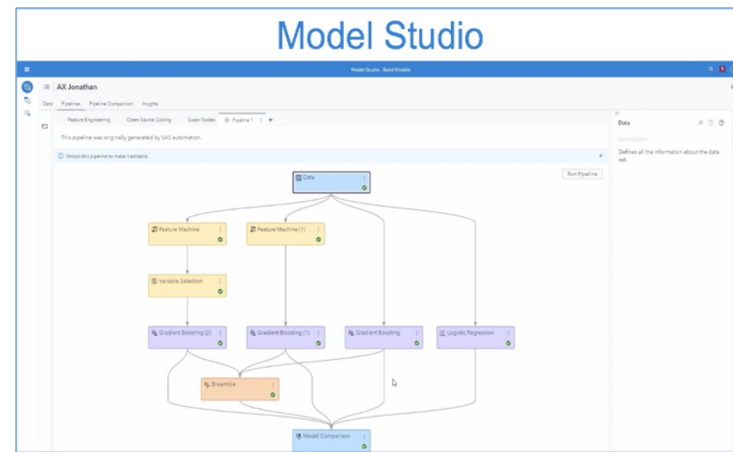
Power of Quantum Computing





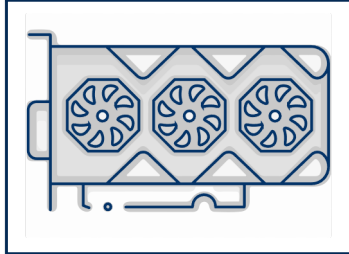
Power of Quantum Computing

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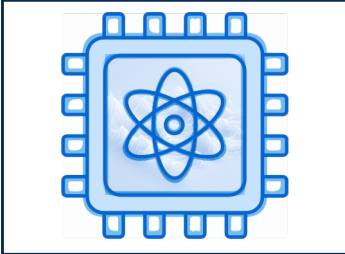


SAS Compute

Linear Algebra Acceleration



Optimization Acceleration





Causal Statistics and Econometrics

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Importance of Causal Analytics

Why is causality important?

- There are causal-and-effect questions everywhere in economics and statistics
- Currently the inflation rate is high, **what if** we increase the tax, decrease the tax, or increase some people's taxes but decrease others' taxes?

THINK REGRESSION

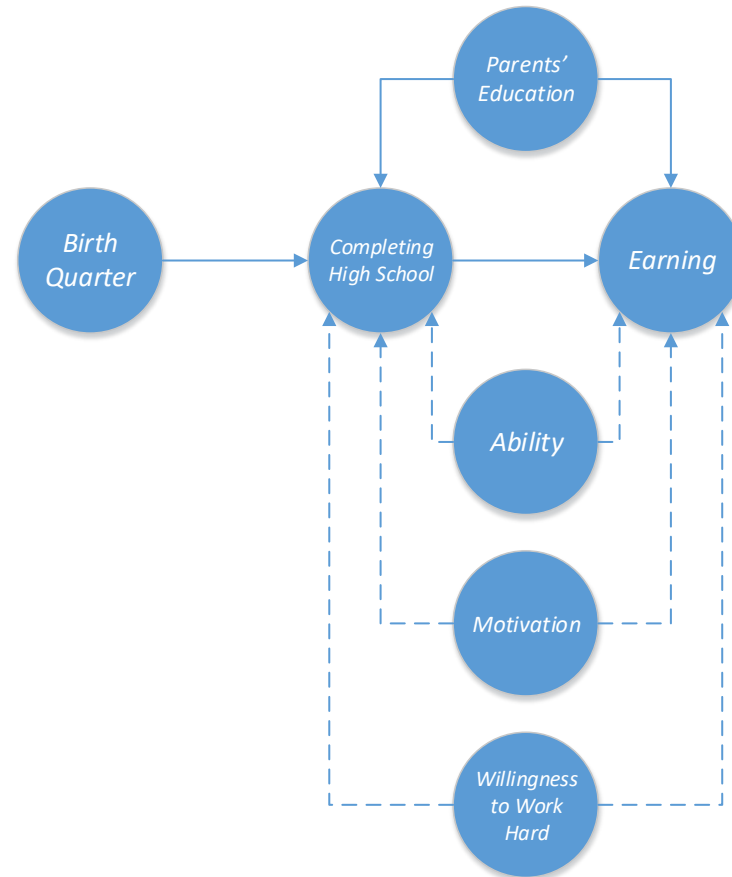
$$y_i = \alpha + x_i\beta + \varepsilon_i$$

- Is y truly caused by x ?
- Is it the other way around?
- Are other effects impacting both y and x ?
- What can be done to determine causation?

Example: 2021 Nobel Prize for Economics

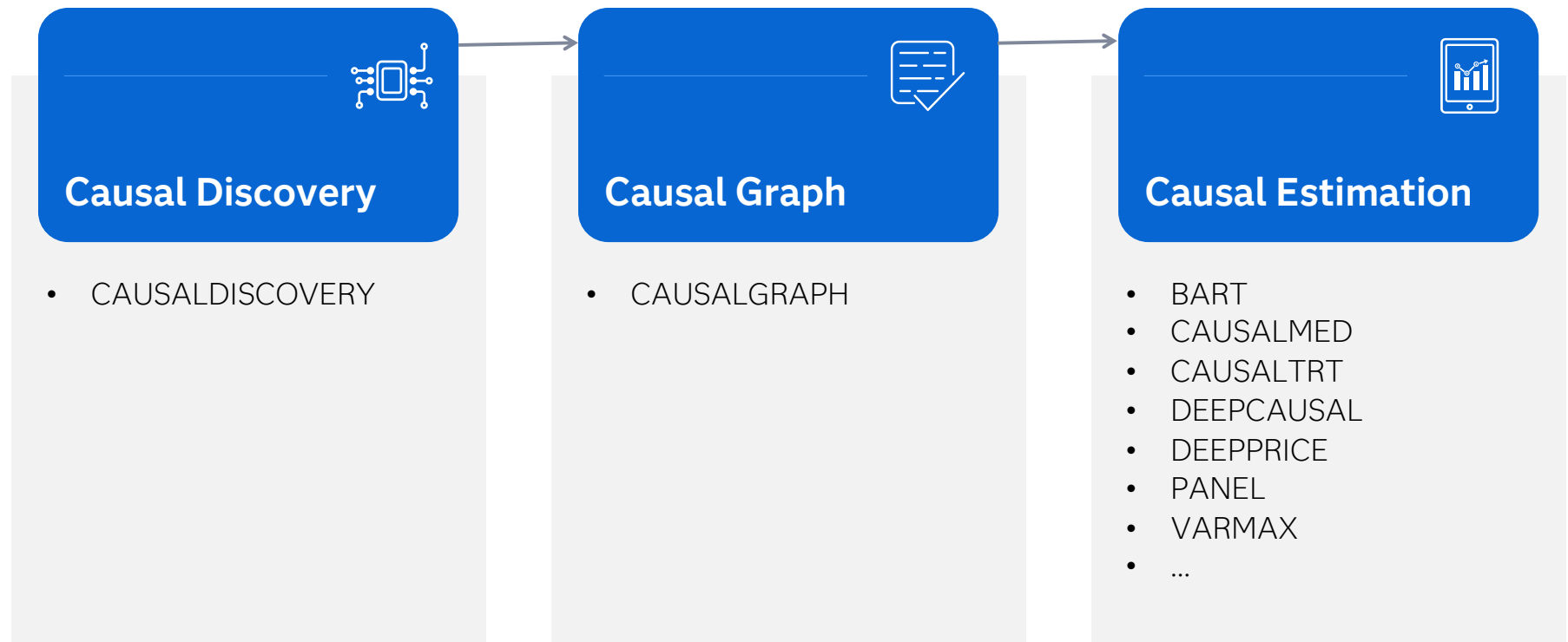
Angrist and Imbens

- Research impact of completing high school on earnings
 - Some variables impact both earnings and completion of high school
 - Violation of regression assumptions
- Solution: **Used specialized methods available in SAS**



Causal Inference

PROCs in SAS



Day in the Life of a SAS Intern





SAS Software

2h · 🌐



Exciting news! 🎉 We're honored to be recognized by Handshake with a 2024 Early Talent Award. 🙌 The #EarlyTalentAwards recognize top workplaces for Gen Z talent, and we're proud to be a place where passionate problem-solvers develop meaningful careers. Learn more: <http://2.sas.com/6188k3opC> #saslife



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Apply for (Early) Career Opportunities



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Q&A