



# Outcomes That Outperform

Joel Jönsson

*Analytics Architect, SAS*

Quantum AI

Digital Twins

Agentic AI

Generative AI



**Machine Learning**



**Large Language Models**



**APIs**

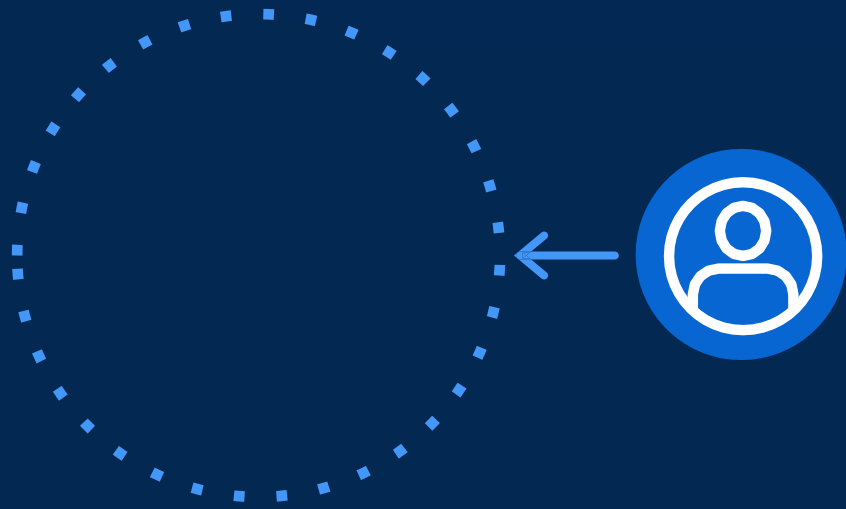
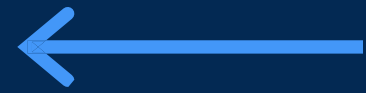
Quantum AI

Digital Twins

Agentic AI

Generative AI

# Agentic AI



**Human out  
of the Loop**

Act on behalf of humans



**Human in  
the Loop**

Engage humans when needed

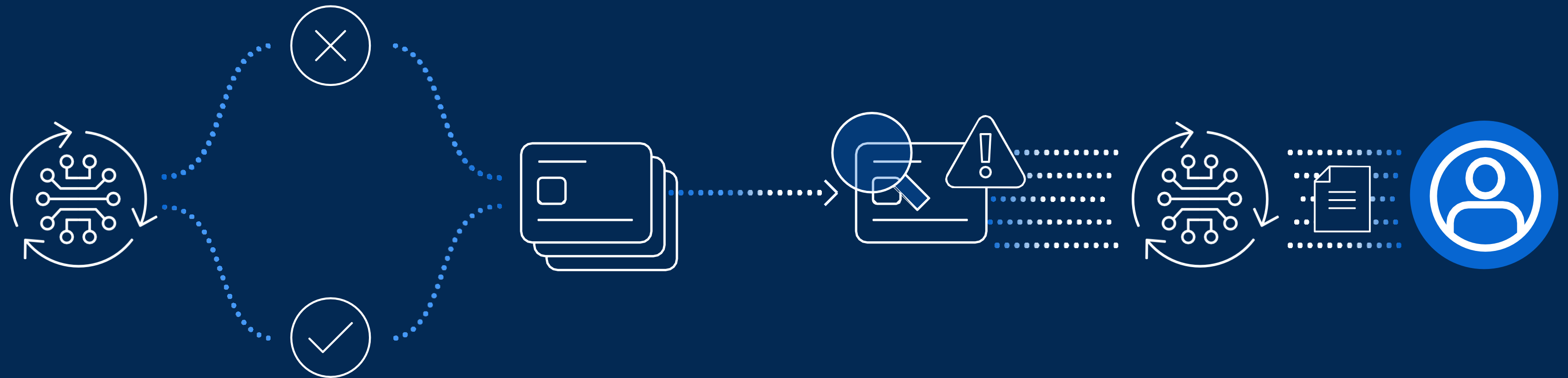
# Agentic AI

Human out  
of the Loop

Act on behalf of humans

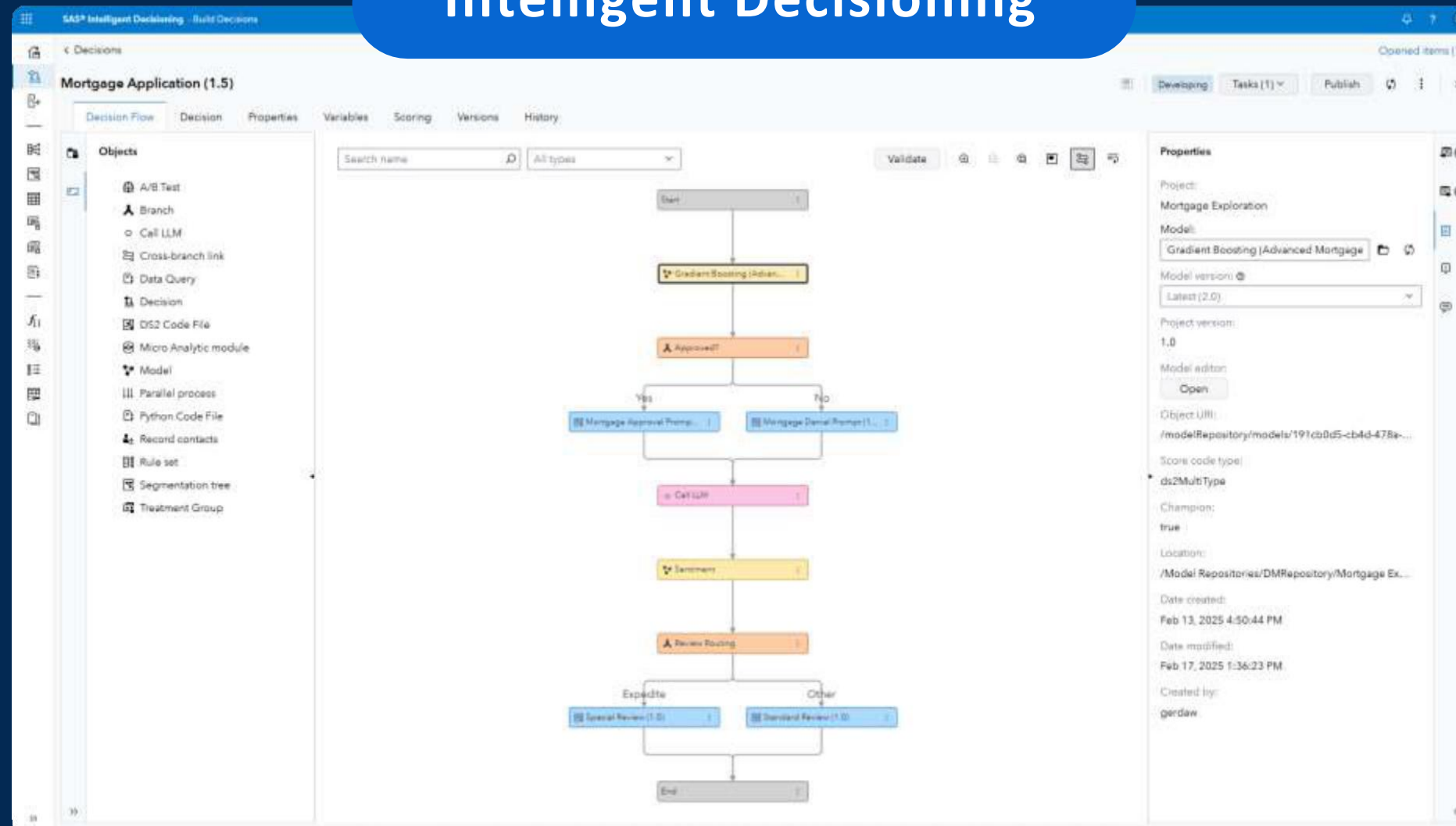
Human in  
the Loop

Engage humans when needed



# Agentic AI

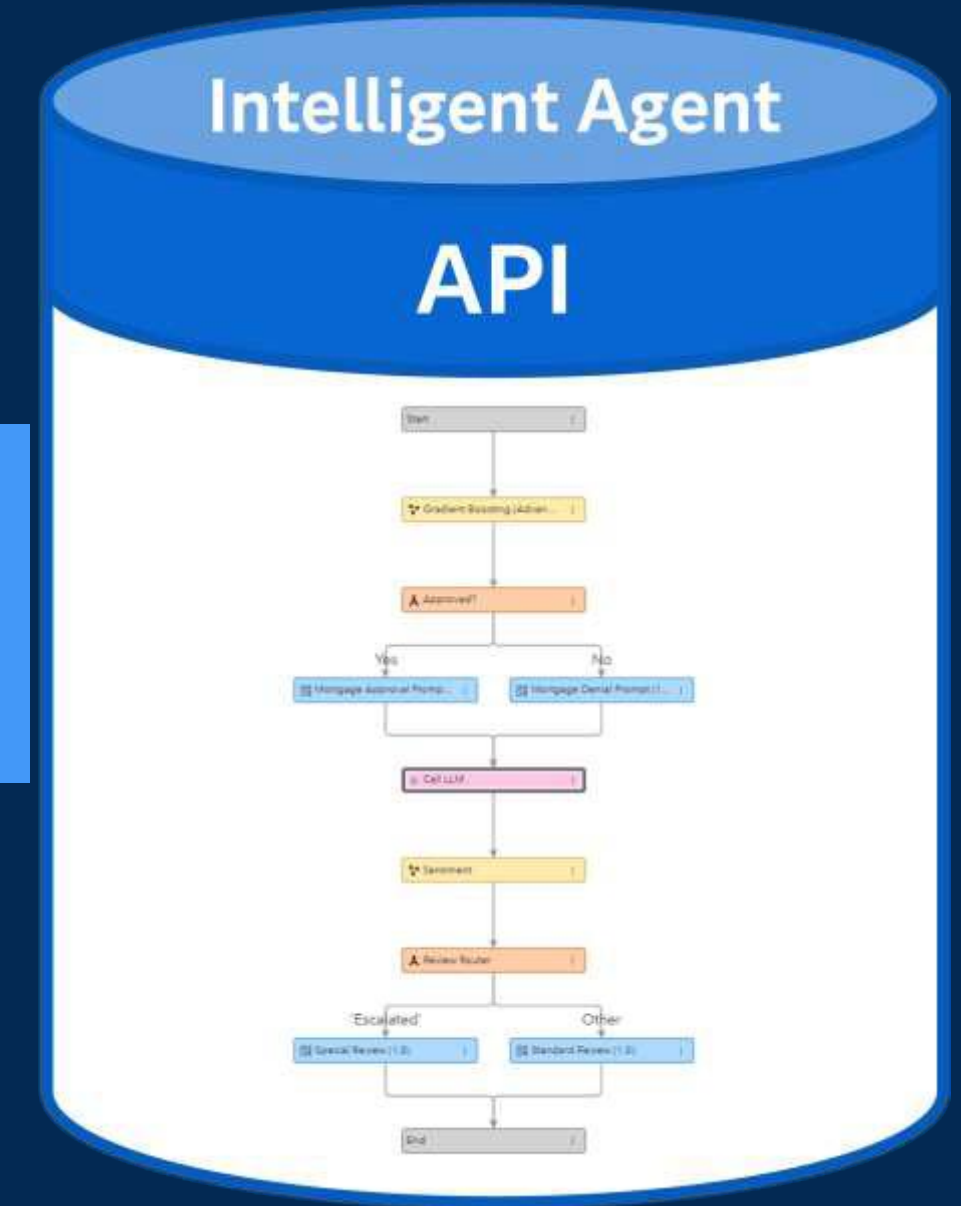
Intelligent Decisioning



Publish

Intelligent Agent

API



# Loan Application Overview Dashboard

Monitor loan application performance, approval trends, and flag critical applications in real-time.

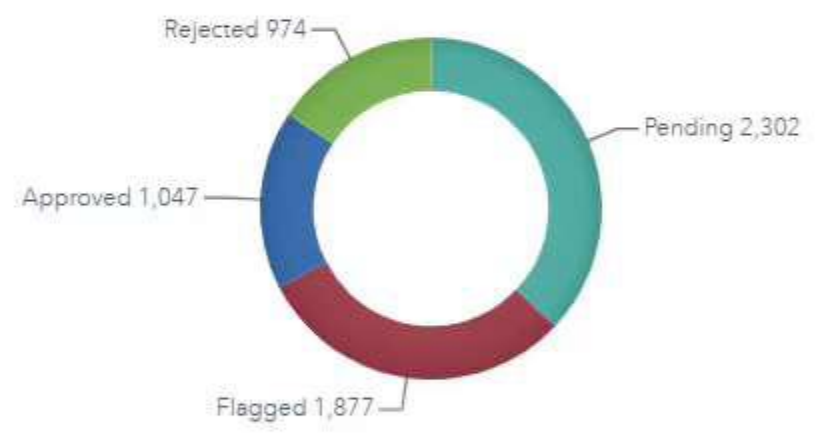
Period  
 This month

<p>Total Applications</p> <p><b>6,200</b></p>	<p>Pending Review</p> <p><b>2,302</b></p>	<p>Approved</p> <p><b>1,047</b></p>	<p>Flagged for Attention</p> <p><b>1,877</b></p>
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Applications Over Time



Application Status District



## List of Applicants

Applicant Name	Amount	Reason Flagged	Days in Queue	Priority
Sheryl Carroll	\$254,000	VIP Customer	3	High
Sarah Lutz	\$100,329	Missing Documents	5	Medium
Bruce Hayes	\$236,800	Missing Documents	10	Medium
Tony Lopez	\$75,000	Low Amount	2	Low



# Loan Application Details

Monitor loan application performance, approval trends, and flag critical applications in real-time.

No data matches the current filters.

Options

Applicant Name  
**Sheryl Carroll**

Status  
**FLAGGED**

Reason Flagged  
VIP Customer

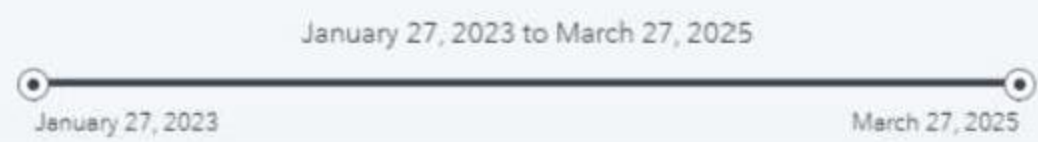
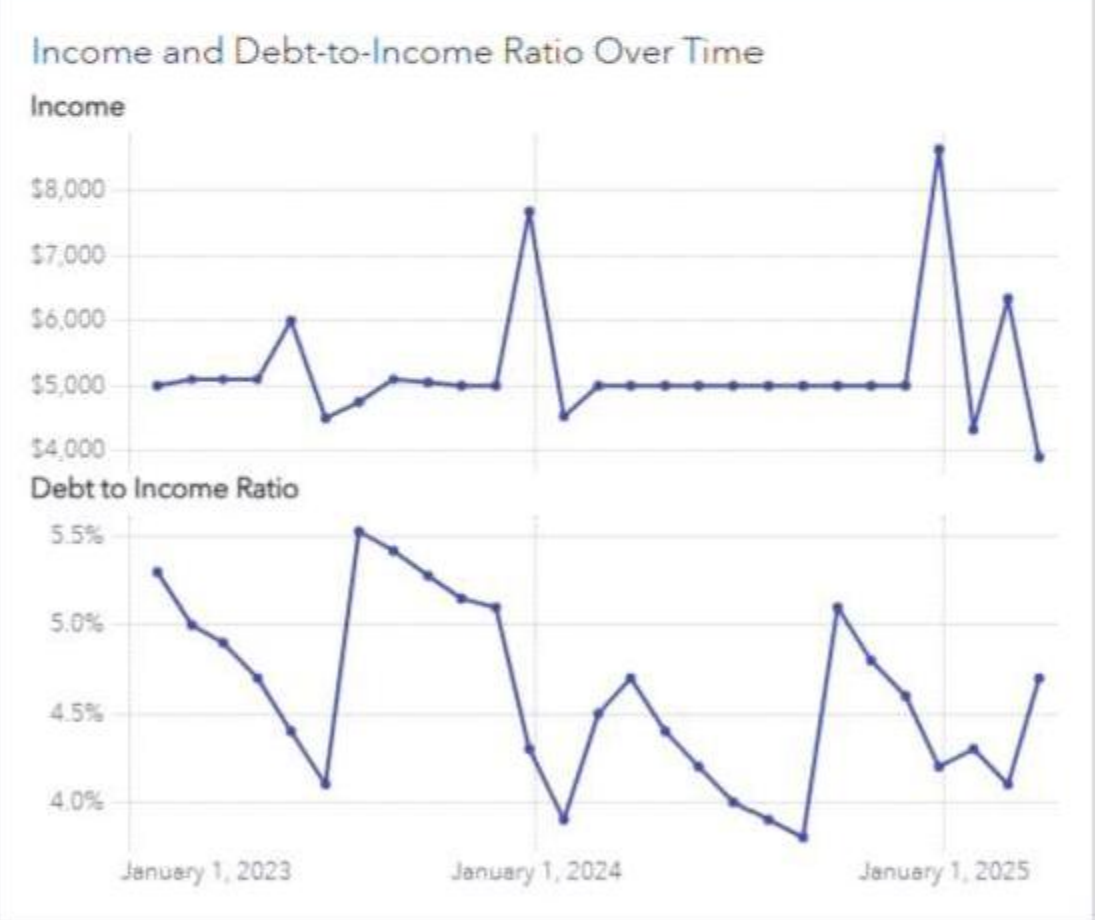
Days in Queue  
3

Amount  
**\$254,000**

Submitted  
April 20, 2025

Loan Type  
Mortgage

Loan Officer Notes  
Coordinate with Private Banking Relationship Management to deliver the decision with utmost sensitivity, emphasizing our willingness to reconsider upon receipt of: A credible diversification plan that reduces concentration in the Los Angeles segment. A second, independent appraisal from a recognized



## AI Agent for Sensitive Loan Cases

Why did you deny the customer's application?

The denial is primarily due to inconsistent income across the last 3 quarters, and a recent delinquency. Do you want me to showcase a path that explains the decision logic or the model card with the fairness and bias assessment?

For more details use one of the following buttons

Show Decision Logic Show Model Card

I need to showcase proof on this decision to the audit department

That is a great idea. Here is the complete lineage that was executed behind this decision.

Show Lineage

Ask me about the currently selected case

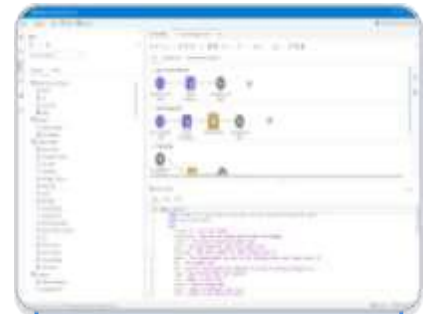
Mortgage Application

### SAS® Information Catalog



- CUSTOMER\_MES...  
Library: MORT  
Date modified: Feb 13, 2025 2:10 PM
- MORTGAGE\_LAB...  
Library: MORT  
Date modified: Feb 13, 2025 2:11 PM
- customer\_message  
Date modified: Feb 13, 2025 1:49 PM  
Modified by: gendaw
- raw\_mortgage\_da...  
Date modified: Feb 13, 2025 1:35 PM  
Modified by: gendaw

### SAS® Studio



- Ingest Mortgage ...  
Date modified: Feb 13, 2025 3:15 PM  
Modified by: gendaw

### SAS® Information Catalog



- Mortgage  
Library: PUBLIC  
Date modified: Feb 13, 2025 2:26 PM
- Mortgage  
Library: Public  
Date modified: Feb 13, 2025 2:39 PM

### SAS® Model Studio



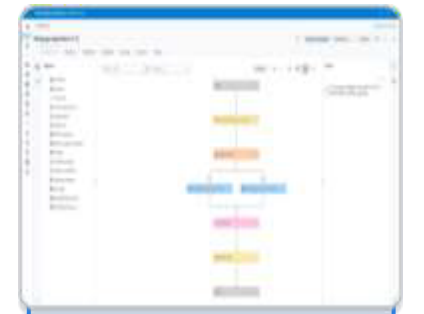
- Mortgage Explora...  
Date modified: Feb 13, 2025 4:51 PM  
Modified by: gendaw
- Mortgage Explora...  
Date modified: Feb 13, 2025 4:51 PM  
Modified by: gendaw

### SAS® Model Manager

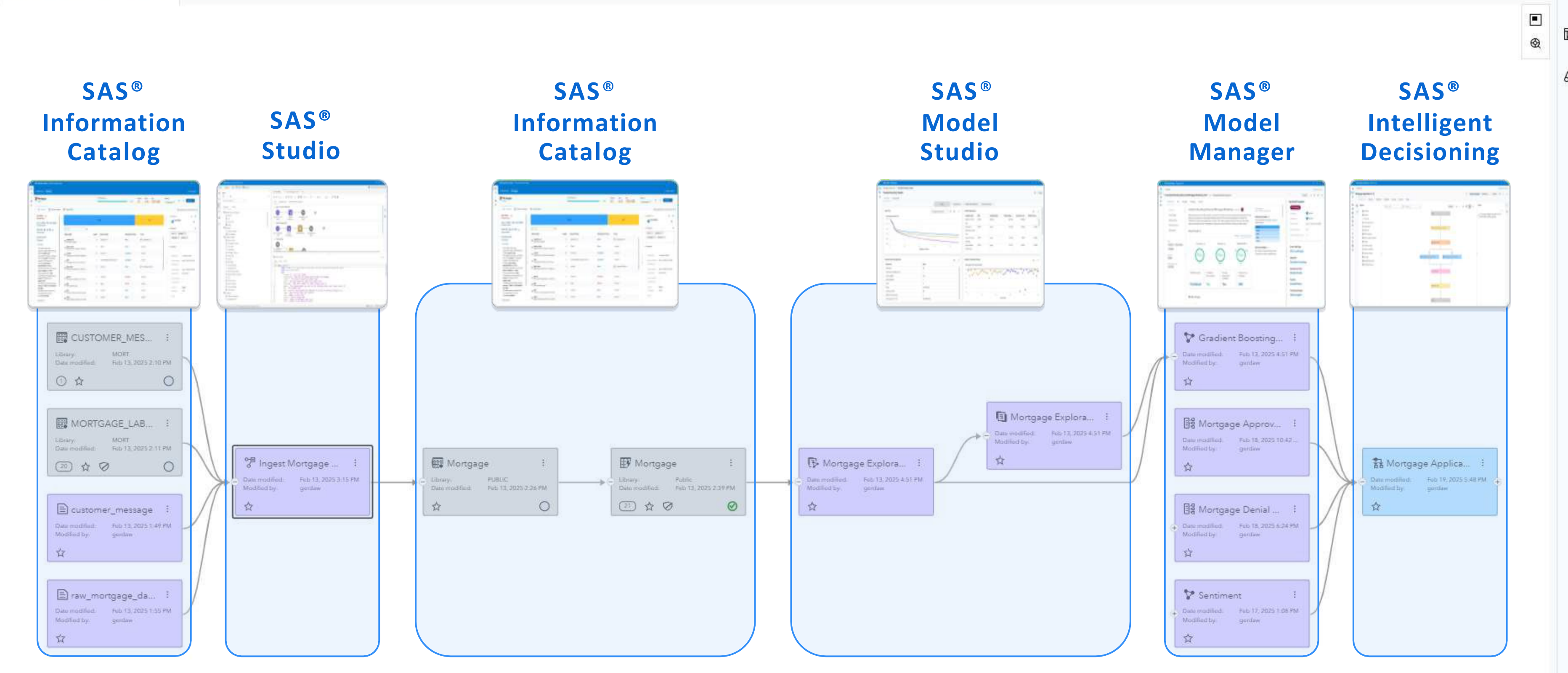


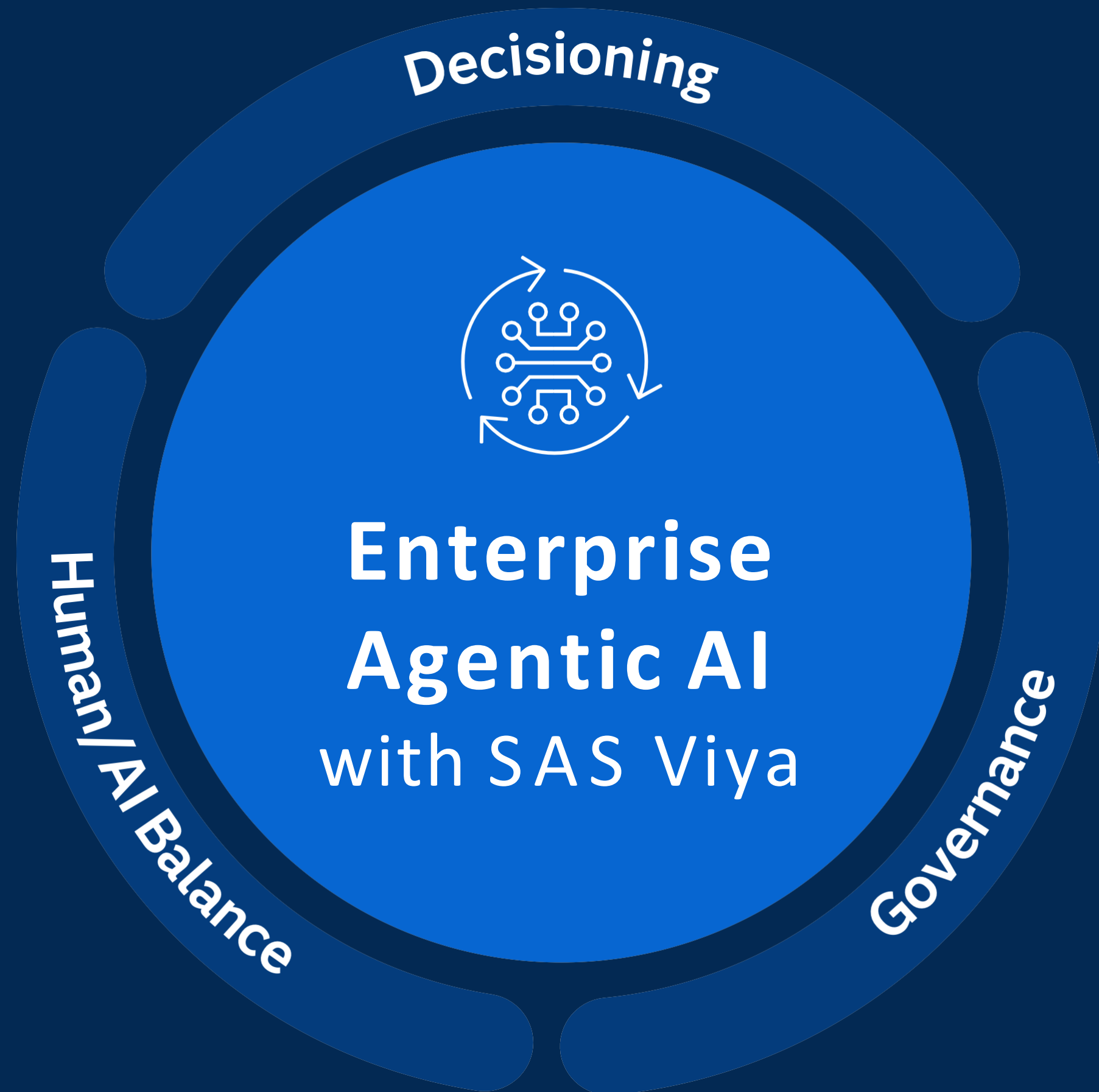
- Gradient Boosting...  
Date modified: Feb 13, 2025 4:51 PM  
Modified by: gendaw
- Mortgage Approv...  
Date modified: Feb 18, 2025 10:42...  
Modified by: gendaw
- Mortgage Denial ...  
Date modified: Feb 18, 2025 6:24 PM  
Modified by: gendaw
- Sentiment  
Date modified: Feb 17, 2025 1:05 PM  
Modified by: gendaw

### SAS® Intelligent Decisioning



- Mortgage Applica...  
Date modified: Feb 19, 2025 5:48 PM  
Modified by: gendaw





Quantum AI

Digital Twins

Agentic AI

Generative AI

**Ssas**®



#SASInnovate

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**sas innovate**  
on tour 2025



# Digital Twins



Quantum AI

Digital Twins

Agentic AI

Generative AI



More than  
**60%**

are actively investing or  
exploring opportunities  
in quantum AI

## Crucial Barriers to Adoption

High cost **38%**

Lack of understanding  
or knowledge **35%**

Uncertainty around  
real-world use **31%**

Lack of trained  
personnel **31%**

Lack of clear regulatory  
guidelines **26%**

**300%**

improvement  
in results

**97%**

reduction  
in time

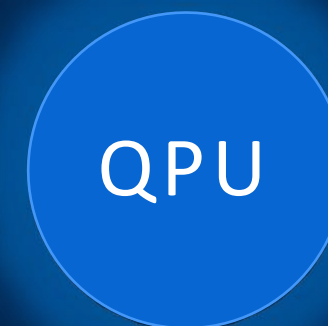
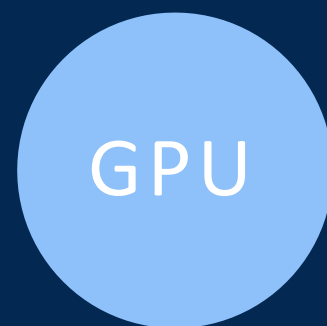
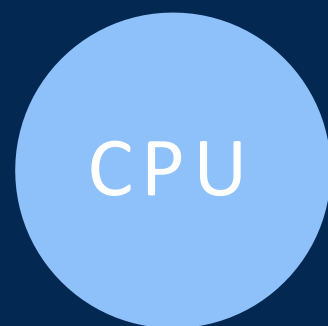


S O F T W A R E



SAS Viya

C O M P U T E





```
import sasoptpy as so
model = so.Model(name='QuantumModel')
# Load your model here
# Example: set vars, objective, constraints
model.solve(quantum = True)
model.solve(primalin = True) # Warm start with quantum solution
```



SAS Machine Learning  
& Optimization  
Libraries



Storage



Quantum  
Agent



Quantum  
Provider  
QPUs



```
proc optmodel;
/* Load your model here */
/* Example: set vars, objective, constraints */
solve with quantum;
solve with milp /primalin; /* Warm start with quantum*/
quit;
```

# Decision Advantage

Quantum AI

Digital Twins

Agentic AI

Generative AI

Artificial Intelligence

Machine/Deep Learning

Smartphone

Cloud

Big Data

Internet

Personal Computer

Microchip

1960s

TODAY

