

Accelerating Productivity: Understand How SAS Viya Copilot Helps Users Work More Effectively Across the Analytics Life Cycle

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1. ABSTRACT

A copilot interface allows users to interact with the underlying platform through simple English prompts. According to Gartner, by 2028, 75% of enterprise users will use AI code assistants, up from less than 10% in early 2023. This paper outlines the SAS Viya Copilot — an AI assistant that accelerates coding, data, and AI tasks to boost user productivity and outcomes. The SAS Viya Copilot also helps enterprises democratize analytics across a broad user community, including programmers, business analysts, data scientists, statisticians, and report developers.

2. INTRODUCTION

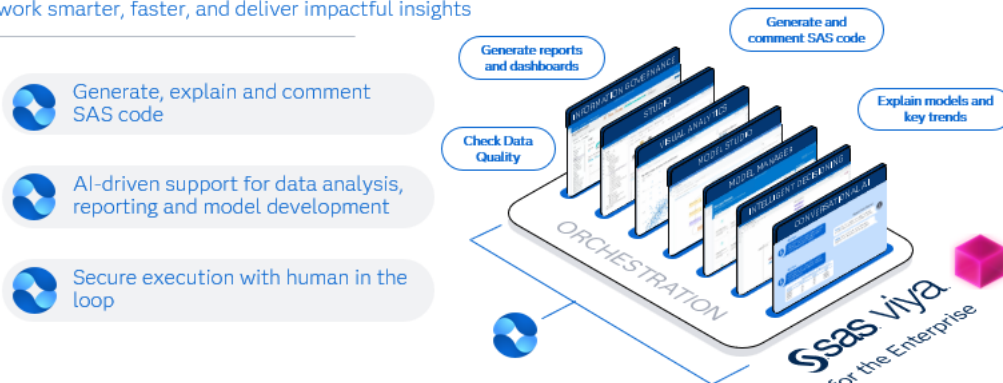
SAS® Viya® Copilot is a conversational, AI-driven assistant for the data and AI lifecycle embedded directly into SAS® Viya®. It provides users with a more intuitive and accessible way to work with the Viya platform, assistance with analyzing data, building machine learning models, gain insights, through a natural language interface.

SAS® Viya® Copilot



Users can simply “ask” SAS® Viya® Copilot to guide them through workflows, offer best-practice recommendations, perform tasks with their permission, removing friction, accelerating time-to-value, and democratizing access to advanced analytics and AI.

Empower analysts, data scientists, and programmers to work smarter, faster, and deliver impactful insights



Viya Copilot brings a new, more efficient and productive way to process the data and AI lifecycle, assisting both coders and no code users through their data analysis, model building and deployment tasks. Specifically, SAS is embedding AI powered intelligence to help users better understand the process, receive guidance on how to perform tasks and get help in executing tasks for them, for enhanced decisioning and productivity.

Benefits	How?
Speed up development for higher user productivity	- Generates, enhances, and debugs code for data processing and AI development - Provides guided recommendations for the next best steps in model building - Accelerates repetitive tasks in the AI lifecycle, from data preparation to model deployment
AI-driven intelligence & decision support	- Offers explanations and insights at every stage of the AI workflow. - Summarizes and translates complex outputs into actionable business insights. - Suggest improvements for model performance, hyperparameters, and feature engineering
Human-in-the-loop, secure execution	- Execute tasks based on user permissions, ensuring human in the loop and controlling the output. - Provide transparent AI decision-making and documentation to meet governance standards. - Results and information are stored in your environment and not exposed to external sources

3. SAS VIYA COPILOT SUPPORTS MULTIPLE PERSONAS

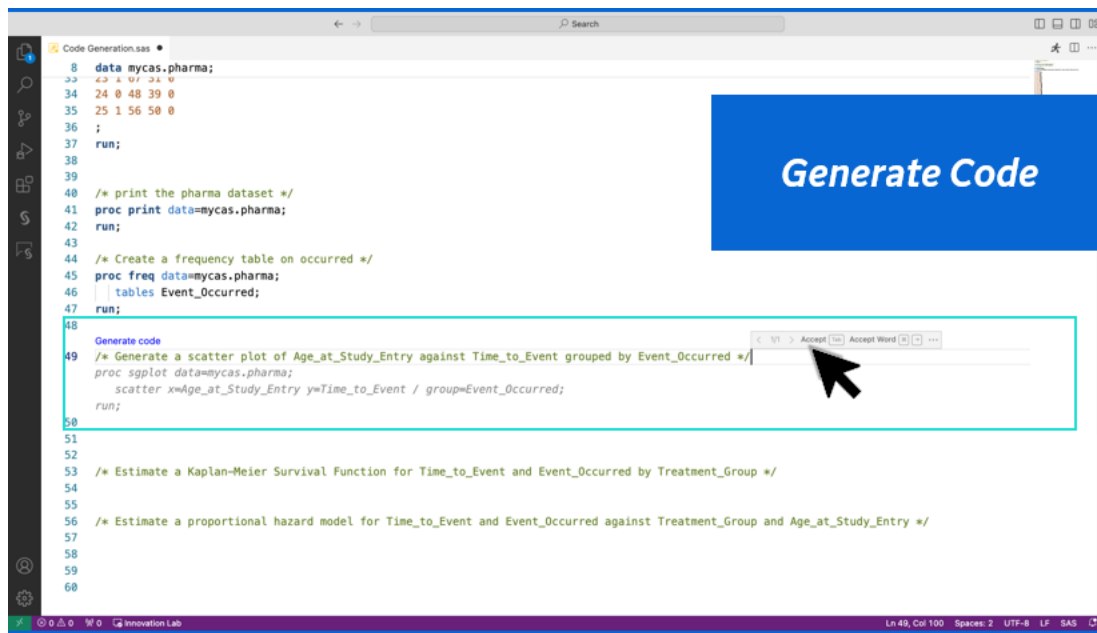
SAS Viya Copilot helps both technical and non-technical users perform data and AI operations with ease thus reducing the amount of effort required and improving productivity.

Statistical Programmer	Biostatistician	Business Analyst	Data Scientist	Report Developer
Build and refine SAS code using conversational prompts to automate modeling steps and optimize performance	Quickly understand data and build statistical models	Deploy, monitor, and govern models through guided workflows and performance diagnostics	Accelerate experimentation and documentation with exploring data, feature engineering, and statistical analysis support and explain model results	Building reports and dashboards quickly with variety of chart options

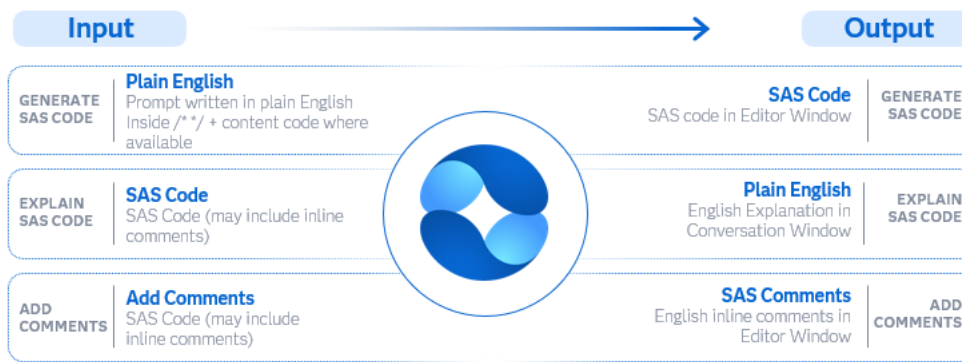
There are three copilot functions that are being introduced in SAS Viya - code assistance, model pipeline development, and augmented analytics.

3.1 SAS Viya Copilot for Code Assistance

SAS Viya Copilot for code assistance delivers unparalleled support in the rapid generation of SAS code with accuracy and consistency, making it easier than ever to quickly create and improve upon your code with AI. It also explains existing code in natural language, making it simple for anyone to understand complex scripts and understand exactly what's happening in their workflows. It can also keep notes and comments inline to ensure you know the function of each of your lines of code for ease of readability.



Here's a quick visual representing a few of the ways you can interact with SAS Viya Copilot for SAS Code Assistance.



1. The first way involves transforming natural language into code. By delivering a conversational prompt to SAS Viya Copilot, one can rapidly generate and improve upon SAS code with generative AI.
2. The second way involves transforming code into natural language. You can ask your SAS Viya Copilot to explain what your code is doing and how it is currently working, and it will deliver you a natural language explanation of the code, saving you time and effort analyzing hundreds of lines of code
3. The next way involves the generation of inline comments for your code, making it simple to maintain documentation and ensure that your team has clarity into your code's functionality.

3.2 SAS Viya Copilot for Model Pipeline Development

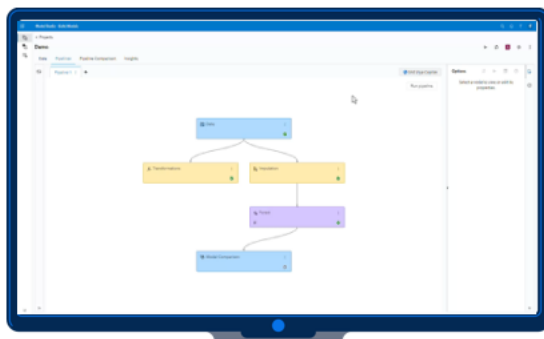
With Copilot for model pipeline development, you get all the tools you need for a user to be able to build powerful machine learning models.

For faster model pipeline development

AI-assisted model building, for more productive AI/ML

Provide intelligent suggestions on the next best step

Execute actions based on user permission



Copilot's AI can analyze model performance, provide model documentation, and provide explanations of models and how they are using your data.

- SAS Viya Copilot also offers recommendations for next steps for building your model pipeline and automatically add nodes to your model pipeline.
- User permissions ensure appropriate governance and highlight the importance of keeping a human in the loop.

Detailed explanations of methods and options

Next node suggestions for building a pipeline

Suggestions for improving existing nodes

Interactive explanations of output and results

INFORMED EXPLANATIONS

INTELLIGENT SUGGESTIONS

ONE-CLICK IMPLEMENTATION

Each of these capabilities comes together to create a simplified model-building experience where any user can effectively create and deploy powerful machine learning models using the power of AI.

Beyond that, they can get in-depth explanations of their models and their respective performance, democratizing the analytics process and helping businesses make greater strides in AI faster.

3.3 SAS Viya Copilot for Augmented Analytics

Copilot for augmented analytics is an intuitive tool to help any user rapidly build interactive and intuitive analytics dashboards with built-in explanations for the rapid extraction of business insights.

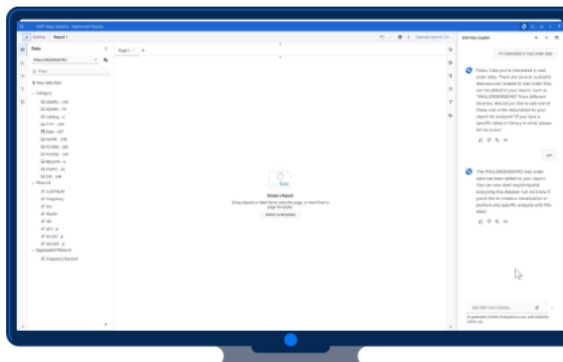
Copilot will take natural language conversation and build powerful predictive models, run complex calculations, and build curated dashboards with a few simple prompts.

You can also use Copilot for augmented analytics to enrich your data with generative AI to rapidly arrange your data to align with your organization's needs.

You can also access automated AI explanations of key trends and points in your data as well as explanations of key reports and visualizations, ensuring you have the information you need to quickly make key decisions at any time.

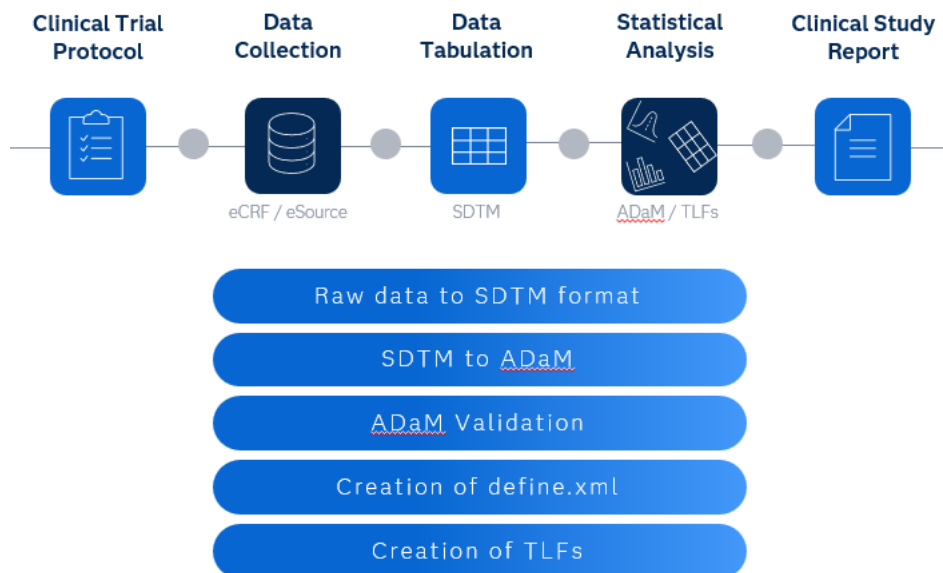
For Augmented Analytics

- Enrich your data with generative AI
- Generate interactive and intuitive dashboards with AI
- Uncover insights faster with AI generated explanations



4. SAS VISION – AI AGENTS HELPING ACCELERATE CLINICAL TRIAL SUBMISSIONS

In addition to the Copilot feature, SAS vision is to develop a suite of intelligent agents that support every stage of the drug submission process, from raw data transformation to final report generation. SAS is building these AI agents in the upcoming releases. The vision is to have these AI agents learn from context and examples, and integrate with secure environments, thus ensuring both speed and data confidentiality.



SAS is building a suite of specialized AI agents designed to automate and accelerate the end-to-end clinical trial development lifecycle. These agents will work collaboratively across key stages—from transforming raw clinical data into SDTM datasets, to generating ADaM datasets for statistical analysis, and finally producing high-quality Tables, Listings, and Figures (TLFs). By combining domain-trained analytical models with governed enterprise data on SAS Viya, these AI agents will help standardize processes, reduce manual effort, improve traceability, and ensure regulatory-ready outputs. This automation aims to significantly shorten development timelines while maintaining the quality, consistency, and compliance required in clinical research.

4.1 An example of an AI Agent based automation - streamlining ADaM code validation with AI agents ([SGS and SAS collaborate on development of AI-powered solution to transform code validation in clinical research | SAS](#))

The statistical analysis plan (SAP) contains requirements, definitions and instructions on how to generate statistical output for the study. Typically, the data source for Biostatistical Analysis is SDTM datasets as it is clean, or at least we would hope so. When the biostatistics activities start, the study is ongoing, so the data will still grow and evolve.

Based on the SAP requirements, programmers write the code, which generate the results (ADaM, TLFs, metadata - define.xml and ADRG)

Current process for validation of output	Agentic AI based validation process
When it comes to the validation of statistical output, an independent validator is involved who has the responsibility to review and make sure that the analysis is of excellent quality The validator will focus on the results, rather than validating the code itself	There are two possible ways – AI agent validating the output OR AI agent validating the developed code which generates statistical output The first option has few challenges – legal, ethical, accuracy, traceability etc... Instead of having AI validating the analysis, let's have AI support the developers to optimize their time by reviewing their code. In this approach, we provide both the SAP and the code to the AI powered tool. The tool then finds issues within the code (like inconsistencies vs. SAP, things that seem to be missing, etc). This way, we aren't sharing any data with the AI tool. Sharing less information, in turn, reduces the usage of token and the hallucinations.

5. CONCLUSION

SAS Viya Copilot is your AI assistant for **analytics and data science tasks** within the SAS Viya environment, leveraging SAS's specialized analytical AI and LLMs to work with your *governed enterprise data* for insights and reporting.

1. Confidence and compliance with Trusted AI & Governed Insights (SAS Foundation).
2. Specialized Analytical Productivity.
3. Democratize Analytics and AI for all skill levels.
4. Seamless Integration with Enterprise Data & AI Workflows.
5. Domain-Specific Augmentation, Not Just Generic Generation.

6. REFERENCES

[Gartner](#) Press release, April 2024

[SGS and SAS collaborate on development of AI-powered solution to transform code validation in clinical research | SAS](#)

CONTACT INFORMATION

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