ABOUT

LabV is a pioneer in providing an AI-powered material intelligence platform for clients from the diverse materials testing and manufacturing sectors. Thanks to unified storage for different types of data and an intuitive interface, the platform facilitates quicker discovery of trends in multivariate data, leading to better R&D outcomes. The ability to quickly spot errors also helps quality control identify and address issues sooner, saving time and resources in the long run. LabV partnered with Wolfram to develop a reliable digital AI assistant to improve their clients' experience on the platform.

THE CHALLENGE

Material testing labs produce vast quantities of data. To ensure that the raw data leads to actionable insights, it needs to be stored, managed and interacted with in an efficient way. Typically, users would perform analyses, test hypotheses and visualize their results manually, which necessitates familiarity with the software and significant time investment for each analysis. To improve the user's journey, LabV was looking for ways in which artificial intelligence technology can facilitate easier, more intuitive and more productive interactions between users and their data.
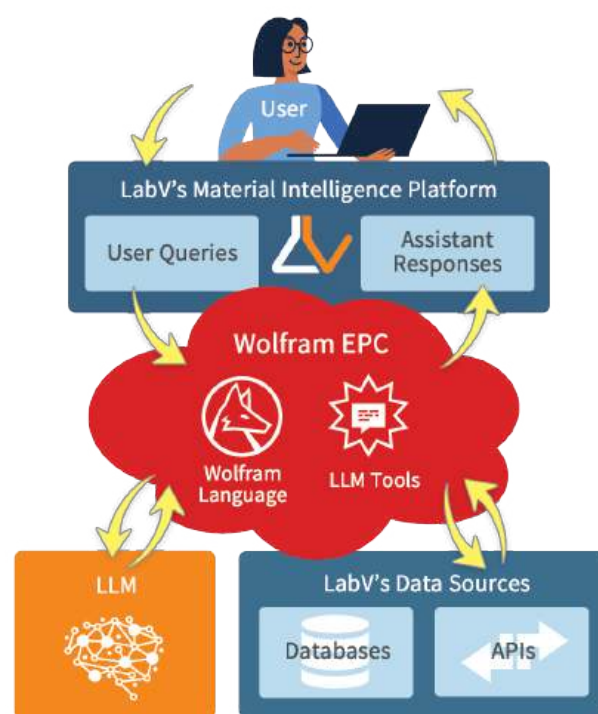
While generative AI is already easily accessible, it is insufficient on its own due to inherent limitations related to data access and unreliable outputs. Exploiting the potential and fluency of large language models while mitigating risks has been a common challenge faced by businesses across different sectors. Wolfram's extensive history with injecting reliable computation into different workflows provided a starting point for a solution which involved developing a reliable layer between the language model and the data stored on LabV's platform.

THE SOLUTION

The Wolfram Solutions group worked with LabV to develop a reliable layer between the underlying data and LabV's LLM to ensure that the LLM receives correct information and has access to the powerful computation of Wolfram Language. This gives LabV's clients confidence in the responses generated by the LLM-powered digital assistant and combines the best of both worlds of language models and computation.

Because the Wolfram solution provides the factual data from the relevant underlying database, LabV's clients can have confidence in the output they receive from the digital assistant. In addition, because the Wolfram solution includes the full power of Wolfram Language, LabV's clients also receive outputs powered by the world's largest algorithm base, including precise computation, beautiful visualizations and much more.

"Our partnership with Wolfram enables LabV to provide high-performance solutions for handling large and complex datasets. By combining their advanced computational capabilities with our material intelligence platform, we support customers in the manufacturing industry by providing data-driven product development and quality control."

—Dr. Marc Egelhofer
Senior Marketing Manager
LabV

The solution works by providing the chat interface of LabV's digital assistant with API access to Wolfram Enterprise Private Cloud. When a user inputs a query, that query is passed to Wolfram EPC, which then combines and coordinates the inputs and outputs of LabV's data, Wolfram's computation results and the LLM to provide the user with a factual and useful response to their query.

ACHIEVEMENTS

The digital assistant makes LabV one of the world's first AI-powered solutions for material testing labs. Acting as a reliable link between LabV's material intelligence platform and the fluency of large language models, the digital assistant enables teams to find patterns, outliers or points of interest more quickly, understand what they mean and quickly iterate through different solutions for their products. This increased agility brings value to internal R&D processes and quality testing, and ultimately gives LabV's clients a competitive advantage in their respective markets.

"Fewer tests means fewer engineering hours and faster development. With LabV, we have a saving of 10% in engineering hours."

—LabV Development Manager
Manufacturer of paints and coatings

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