Affirm launches transformer-based machine learning model for real-time underwriting

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New model builds on 14 years of transaction-level underwriting experience and data to approve more eligible consumers at comparable levels of risk

SAN FRANCISCO--(BUSINESS WIRE)--Sep. 17, 2026-- For 14 years, Affirm (NASDAQ: AFRM) has underwritten every purchase individually, in real time, using machine learning models built in-house. That approach is central to what Affirm promises the people who use it: every purchase gets its own decision, based on what a person can responsibly repay that day, with no late or hidden fees.

Today, Affirm announced the latest advancement of that system: a transformer-based model that learns from the order and timing of events in a consumer's credit history. The model is now live at checkout in the U.S.

In its initial deployment, Affirm used the model to approve additional eligible applications that its existing system would have declined, including those with limited credit histories and no FICO scores. Measured against a control group, that produced 3.4% more completed purchases, and those additional loans performed better than a comparable expansion under Affirm's previous machine learning models.

"We've steadily accelerated the amount of data we use to train each generation of our underwriting models," said Libor Michalek, Affirm President. "What's exciting about the transformer model architecture is that we can now find new information within the data we already have. Seeing a credit history more clearly means we can responsibly say yes to more people."

Finding more signal in credit history

Affirm's underwriting models have improved with each generation, learning from more transactions and repayment outcomes. They've long used credit-bureau measures such as balances, credit utilization, account counts, and payment history. Those measures remain important, but they summarize a credit history that is always changing.

The transformer can identify patterns within and across credit accounts, including how they change over time. It does that without a separate measure being designed for each pattern in advance, helping Affirm find more signal in existing data.

Built for decisions at checkout

Building a better model was only part of the challenge.

Affirm built a proprietary algorithm that produces the same level of explainability as traditional machine learning models, while keeping the model fast enough for real-time use.

Validation and ongoing monitoring help ensure the model's explanations are accurate and reliable.

"Underwriting is the heart of what we do," Michalek added. "The goal isn't to approve every transaction, it's to make the right decision for each one. We don't benefit from extending credit that can't be repaid, which means saying yes to more people only works when we get even better at saying no."

Read more about how Affirm built and tested the model in our technical blog.

About Affirm

Affirm's mission is to deliver honest financial products that improve lives. By building a new kind of payment network – one based on trust, transparency, and putting people first – we empower millions of consumers to spend and save responsibly and give thousands of businesses the tools to fuel growth. Unlike most credit cards and other pay-over-time options, we never charge any late or hidden fees. Follow Affirm on social media: LinkedIn | Instagram | Facebook | X.

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Press Contacts
press@affirm.com

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