U.S. Ski & Snowboard and Google Announce Collaboration to Build an AI-Based Athlete Performance Tool

Industry-first video-analysis tool turns smartphones into high-precision motion capture sensors for Team USA skiers and snowboarders

PARK CITY, Utah and SUNNYVALE, Calif., Feb. 5, 2026 /PRNewswire/ -- U.S. Ski & Snowboard, the national governing body for skiing and snowboarding in the United States, and Google today announced a collaboration on an industry-first AI video-analysis tool built on Google Cloud for skiing and snowboarding. Led by the high-performance needs of world-class athletes, including U.S. Olympians, this experimental AI tool is designed to enhance training precision and mountain safety by delivering near real-time, data-driven insights.

To develop the AI tool, Google Cloud engineers worked side-by-side with the Stifel U.S. Freeski Team and Hydro Flask U.S. Snowboard Team in extreme environments in Austria and Colorado to tackle a long-standing data blind spot in winter sports. For decades, elite coaching has been a choice between two extremes: subjective human observation on the mountain or high-precision data inside a laboratory. Traditional motion-capture requires athletes to wear specialized suits covered in sensors, which are impractical for outdoor training and often fail in sub-zero, high-velocity conditions. This AI tool replaces fragile, wearable hardware with cutting-edge AI from DeepMind that can map a human body in 3D using only video. By leveraging spatial intelligence to "see" through bulky winter gear without the need for sensors.

"This new AI tool is a major coaching development," said Anouk Patty, chief of sport, U.S. Ski & Snowboard. "Video is the most commonly used and effective coaching tool, but analyzing it used to be a manual, time-consuming process. By working to create an AI tool that works with a smartphone, we can now analyze competition-grade footage with an extra layer of insight. This isn't just about winning medals; it's about providing our athletes with the safest and most advanced training environment in the world."

The tool is built with Google Cloud's full-stack AI capabilities to achieve near real-time analysis on the mountain. From custom TPUs in Google data centers, to the reasoning engines of Gemini, to leveraging spatial intelligence research from Google DeepMind, the collaboration resulted in a system that understands human motion with precision. Unlike traditional motion capture that requires specialized suits, wearable sensors, or multi-camera laboratory setups, the new AI tool turns a standard smartphone into a high-precision sensor, with features including:

- **On-mountain analysis:** Using a smartphone, coaches are able to capture video from the sidelines or the bottom of a run. The footage is uploaded to a dashboard, where the tool processes it.
- **No wearable gear required:** With the new tool, athletes can train in their standard gear. The AI uses markerless motion capture to identify skeletal points through clothing and equipment, ensuring natural movement without the weight or distraction of sensors.
- **Conversational insights:** Using the multimodal power of Gemini, coaches and athletes can then interact with their data using natural language. Instead of scrolling through spreadsheets, a coach can simply ask the tool, "Based on that airtime, how much faster did the rider need to spin to complete the rotation?" The AI then estimates the angular velocity needed to land the trick.
- **Long-term improvements:** Each session is stored in a centralized content database, allowing for deeper analysis over time and across disciplines. Coaches and athletes can then better understand why a trick was successful, how it was scored, and where targeted improvements can be made.

"Our collaboration with U.S. Ski & Snowboard is the blueprint for a global shift in how humans move, train, and recover, moving beyond historical data to provide athletes with near real-time, prescriptive coaching," said Oliver Parker, vice president, Global Generative AI, Google Cloud. "By using our full-stack AI, we're helping democratize elite coaching—proving that if we can solve for the world's best athletes in the most extreme conditions, we can help anyone from a physical therapy patient to an amateur golfer improve their games."

U.S. Ski & Snowboard freeski and snowboard athletes and coaches are continuing to prototype this AI tool ahead of the Olympic Winter Games.

About U.S. Ski & Snowboard
U.S. Ski & Snowboard is the Olympic and Paralympic National Governing Body of ski and snowboard sports in the USA, based in Park City, Utah. Started in 1905, the organization now represents nearly 240 elite skiers and snowboarders competing on 10 teams, including the Stifel U.S. Ski Team: alpine, cross country, freestyle moguls, freestyle aerials, freeski, nordic combined, Para alpine and ski jumping, the Toyota U.S. Para Snowboard Team and Hydro Flask U.S. Snowboard Team. In addition to the elite teams, U.S. Ski & Snowboard also provides leadership and direction for tens of thousands of young skiers and

snowboarders across the USA, encouraging and supporting them in achieving excellence. By empowering national teams, clubs, coaches, parents, officials, volunteers and fans, U.S. Ski & Snowboard is committed to the progression of its sports, athlete success and the value of team.
U.S. Ski & Snowboard is supported by various partners including; Stifel, Cloudflare, Hydro Flask, Toyota and Visa, in addition to many generous donors.
For more information, visit www.usskiandsnowboard.org.

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