



AI at the Edge with NVIDIA Jetson™

Challenge

- > Enable live-streaming and instant access to sports match recordings
- > Move video processing from the cloud to the camera
- > Lower the computational budget of each match to continue developing new AI features

NVIDIA Solution

- > On-device processing with NVIDIA Jetson Xavier™ NX
- > A suite of software that can be run on the chip
- > WLAN and ethernet connectivity enables various end-user solutions
- > RT networks and SDK for interacting with some of the hardware

Results

- > The ability to instantly process the match on a user's device
- > A new avenue to enable live-streaming of matches
- > New possibilities and ideas for adding more AI capabilities to the experience

VEO ENABLES LIVE-STREAMING AND INSTANT ACCESS TO RECORDINGS FOR GRASSROOTS SPORTS

"We needed the best chip on the market to make it possible to process raw video instantly and provide live-streaming to our customers. We're proud to work with NVIDIA to make the impossible possible."

— Kawus Nouri, VP of Products

Video requires an enormous amount of data to process, and in Veo's early days, it could take up to 48 hours to process a regular 90-minute football match. Through improvements, it came down to 24 hours, then 8, then 2 to 6 hours. This was good, but users wanted to be able to review games immediately, or at half-time, so they could show players how to improve and perform better to win. They also wanted to start doing analysis on the bus home from an away game.

NVIDIA Platform

Veo's solution to instant access was to move the processing from the cloud to the camera itself. They developed a new camera, the Veo Cam 2, which uses NVIDIA Jetson Xavier NX. Bringing the processing straight to the user's device not only saves time, but also Veo's associated cloud-processing costs. With on-device processing and inference, video can be served to viewers using live-stream and coaches can access the broadcast-quality recording right after the game. Live-streaming is a game changer for grassroots sports and opens up more avenues for the future such as using AI to automatically pinpoint key highlights in the game and show them to the audience—just like in professional sports.

Products Used

- > NVIDIA Jetson Xavier NX
- > NVIDIA GPUs

Processing Engines Used

- > NVIDIA DeepStream
- > GStreamer

Software Used

- > NVIDIA® TensorRT™
- > NVIDIA CUDA® and cuDNN



Veo Results

Giving coaches an easy way to record matches or training sessions and equipping them with analysis tools makes their teams better. They can review footage with players immediately after gameplay to learn and improve team performance. While Veo's main customer base was primarily coaches, live-streaming has expanded its user base to include more sport lovers—from fans, friends, and family to scouts and college recruiters.

Broadcast companies have shown that sports work best live; being able to experience the match in real-time is the next best thing to being there. Veo gives small, local teams the ability to broadcast those games that mean a lot to the local people, to celebrate local heroes, and to provide the same opportunities that professional athletes have.

About Veo www.veo.co

Veo is making advanced sports technology accessible to all levels of the game through an easy-to-use AI-powered camera and analysis platform. The portable camera allows coaches, players, and parents to record matches and training sessions automatically, while the analysis platform equips them with tools to quickly cut highlights, tag players, and create visual learning experiences to enhance player development.

LEARN MORE

Contact us: jetson@nvidia.com

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