

Case Study

Intel® Xeon® Processors

Universal Accessibility Makes Getting Around the Team USA Training Site Easier and More Inclusive



4th Gen Intel® Xeon® processors provide the speed and scale needed for venue modeling and directional guidance for athletes and staff.

Solution Summary

- 4th Gen Intel® Xeon® processors
- Intel® OpenVINO™ Toolkit



“Using technologies like Intel Xeon processors instead of GPUs, we can deploy a universal accessibility platform that scales to accommodate thousands of concurrent users while costing much less.”

– Neil Barnfarther, Chief Commercial Officer, Intel Partner

Executive Summary

Team USA's Training Site at the Olympic and Paralympic Games Paris 2024 is an enormous complex, and athletes, trainers, and staff unfamiliar with the space need help to traverse quickly and independently. A universal accessibility platform addresses this challenge by offering individuals of all abilities turn-by-turn directions through an augmented reality (AR) app on their handheld devices. In order to create this service, the platform provider first scans the venue in detail. The provider then sends the resulting data set upstream, where servers equipped with 4th Gen Intel® Xeon® processors supported by the OpenVINO™ Toolkit use machine learning to model the facility. The inclusive navigational experience makes Team USA's Training Site more accessible to athletes and staff, including those with disabilities.

Challenge

Getting around expansive, unfamiliar facilities can prove difficult for the athletes, coaches, and staff supporting Team USA at the Olympic and Paralympic Games Paris 2024. For those who are visually or mobility impaired, it's even more challenging to find their way safely and independently.

A universal accessibility platform makes it easier for Team USA athletes and staff to find their way around the Training Site, which hosts the team's welcome



Data from a 3D mapping process is upstreamed to servers equipped with 4th Gen Intel® Xeon® processors and the OpenVINO™ Toolkit, where the CPUs with built-in AI acceleration technologies handle the complex machine learning workloads involved with modeling Team USA's Training Site.



After losing his sight, Neil Barnfather’s personal experience helped fuel his passion for developing a universal accessibility platform.

experience and serves as a training hub and “home away from home” during Paris 2024. The AR-enabled app can assist athletes and staff at the Training Site in identifying the relevant training or recovery location and obtaining visual or audio guidance to get there.

Solution

Creating a seamless end-user experience is a multi-step process. First, a survey team uses a handheld laser-based device to capture 360-degree, high-resolution details of the Training Site’s walkways, elevators, training areas, and other amenities. The 3D mapping process generates millions of data points, and the resulting data set moves upstream to servers powered by 4th Gen Intel Xeon processors and supported by OpenVINO™. There, the CPUs with built-in AI acceleration technologies handle the complex machine learning workloads involved with modeling the Training Site.

Next, developers create a 2D floorplan map identifying points of interest like seating areas, accessible entrances, and restrooms. The team then finalizes the portable app experience using the targeted points of interest and the Training Site’s 3D model. The app allows users to move

about the space and receive turn-by-turn directions through augmented reality or an interactive map. The app also lets users select visual or audible assistance for guidance around the facility and customizes the type of experience needed, such as a step-free route.

“It’s fulfilling to provide a truly universal accessibility platform that helps athletes—and anyone else—navigate to their destinations freely and independently whether they have a disability or not.”

—Evelyn Tichenor, VP of Sales and Partnerships, Intel Partner

Results

4th Gen Intel Xeon processors with OpenVINO offer the right balance of price, performance, and flexibility for the universal accessibility platform. The choice of Intel CPUs helps manage costs and allows the platform to accommodate thousands of simultaneous users.

The universal accessibility platform makes venues more welcoming for individuals of all abilities, and optimizes traffic control and staff training. As a result, Team USA athletes and staff can enjoy a safe and seamless experience as they prepare for and attend Paris 2024.

At the Olympic and Paralympic Games Paris 2024, it is important to consider all aspects of the athlete experience. Solutions like the universal accessibility platform demonstrate how technology can promote independence and autonomy for individuals of all abilities, and sets the stage for additional gains in accessibility for Olympic and Paralympic Games in the future.

Key Takeaways

- A universal accessibility platform powered by Intel Xeon processors and OpenVINO delivers a performant and scalable basis for directional assistance.
- Using CPUs for machine learning and modeling workloads provides a cost-effective alternative to GPUs.
- Intel shares a common goal of supporting partners like the universal accessibility platform, which helps give people with or without disabilities greater autonomy.



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