Case Study

Intel® Xeon® Processors

With Amazon and Intel Solutions, the aiScout App Connects Prospective Athletes with Professional Teams Faster Than Ever Before

ai.io lowers hosting costs by 40% and claims a 50–200% inference performance increase using the latest Amazon EC2 instances and Intel® Xeon® processors.[1]

Solution Summary

- Intel® Xeon® processors
- Intel Gaudi® accelerators
- Intel® Distribution of OpenVINO™ Toolkit
- Amazon EC2 DL1 instances

Executive Summary

Through its AI-enabled, free application, aiScout lets any athlete use self-recorded videos of their athletic technical drills to showcase their sporting skills. The information then moves to the cloud for analysis, scoring, and insights that can improve an athlete's performance. Using data that individual athletes share through the app, sporting organizations can use that information to identify and recruit talented amateur athletes efficiently. To maximize application performance and scale, aiScout relies on technologies including Amazon EC2 instances using 4th Gen Intel® Xeon® processors and Habana Labs' Intel® Gaudi® accelerators, and the Intel® Distribution of OpenVINO™ Toolkit along with ai.io's markerless motion capture platform based on their 3DAT markerless motion capture for video analysis. ai.io found that Amazon's EC2 DL1 Intel Gaudi accelerator-based instances cost at least 40 percent less for model training than GPU-based instances. Plus, after upgrading from 3rd Gen to 4th Gen Intel Xeon processor-powered instances, ai.io claims a 50 to 200 percent performance improvement in inference.[1]

Challenge

In the past, sports recruiters had limited reach when evaluating potential team members. Finding the best athletic talent involved extensive travel or watching many hours of recorded or live games. Despite those efforts, recruiters could overlook potentially stellar athletes living nearby or in rural areas. The sports industry needed a new way to democratize the talent scouting process to identify

aiScout can recognize and evaluate 1,000 biomechanics data points from standard video to create three-dimensional visualizations of athletes and extract detailed performance data with high accuracy and low latency.

the best players no matter where they resided. ai.io set out to solve that problem but faced three significant challenges when developing their app. The first hurdle was ensuring aiScout could evaluate each athlete's videos captured by everyday mobile device cameras. aiScout needed to examine a player's speed, agility, and technical skills, even when the video footage was shaky or captured in low-light conditions. Secondly, the application had to offer the performance and scalability necessary to accommodate tens of millions of players' profiles and hundreds of millions of uploaded videos. Lastly, the app's underlying infrastructure needed to be cost-effective enough so ai.io could provide its app for free to anyone interested in boosting their athletic skills and being discovered by a talent scout.

Solution

To support their application on the backend, ai.io chose scalable and performant Amazon EC2 instances supported by innovative Intel® technologies. Using Amazon EC2 DL1 instances with Intel Gaudi accelerators, ai.io could speed model training without GPUs. The Intel Distribution of OpenVINO Toolkit also helped the ai.io team to optimize its production workloads on Amazon EC2 instances using 4th Gen Intel Xeon processors. Using the 3DAT markerless motion capture platform for video analysis, aiScout can recognize and evaluate 1,000 biomechanics data points from standard video to create three-dimensional visualizations of athletes and extract detailed performance data with high accuracy and low latency.

> "For our team at ai.io, it's all about speed. Amazon EC2 instances using Habana's Intel Gaudi and 4th Gen Intel Xeon processors gave our app a 50-200% performance increase and saved us 40% in hosting costs."
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> *—Jonathan Lee, Chief Product Officer, ai.io*

Results

In the past, a sports organization regularly required 18 months to identify potential players, evaluate their performance, and sign them to their team. With aiScout, the process can take as little as two weeks, and the application has placed over a hundred players on professional teams. According to ai.io, its move from 3rd to 4th Gen Intel Xeon processor-based instances increased its inference performance by 50-200 percent. The company also lowered its most significant cost — reserving and running the machines supporting its production servers—by 40% compared to GPU-based solutions. The savings helps ai.io preserve its vision for a free app that levels the playing field for prospective athletes everywhere.

Key Takeaways

The application was architected from the ground up to serve players and talent scouts and provide synergistic benefits to each audience.

To encourage app usage by any athlete, the app needed to accommodate video from the most commonly available source: players' phones with cameras.

By making app data readily accessible to recruiters in one place, recruiters can find and sign players much more quickly and discover people they might not have identified through legacy talent-sourcing methods.

For More Information

Explore Intel Xeon processors.

Learn about Habana's Intel Gaudi accelerators.

Find out more about the Intel® Distribution of OpenVINO™ Toolkit.

Learn more about Amazon EC2 instances.

Learn more about ai.io.

[1] Performance claims provided by ai.io 11/6/2023

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