NFL and AWS Partner to Transform Player Health & Safety

The NFL and Amazon Web Services (AWS) are partnering in an effort to transform player health and safety using cloud computing, machine learning and artificial intelligence (AI).

Together, the NFL and AWS are innovating to shape the future of football.

The partnership combines the NFL's extensive set of game data with AWS technologies to provide a deeper understanding of the game than ever before. The NFL and AWS will work to develop new tools and generate deeper and better-informed insights into injuries, specifically the impact of a variety of factors such as game rules, equipment, and rehabilitation and recovery strategies. Over time, the collaboration aims to also build the capability to predict the risk of injuries before they happen.

This partnership addresses the NFL's top priority—advancing player health and safety—by developing new approaches and advanced tools. The data collected through this work has the potential not only to revolutionize football, but also to help address injury prevention and detection beyond football.

The Digital Athlete

The Digital Athlete will apply AWS's AI, machine learning and computer vision technologies to the NFL's data sets from numerous sources—including player position, play type, equipment choice, playing surface, environmental factors and aggregated and anonymized player injury information—in an effort to improve treatment and rehabilitation of injuries in the near-term, and eventually to help predict and intervene to prevent injury.

AWS x NFL

Since 2017, the NFL has used AWS as its official cloud computing and machine learning provider for the NFL NextGen Stats platform, which provides real-time location data, speed, and acceleration for every player during every play on every inch of the field.

Building on the existing Next Gen Stats partnership and as the NFL marks its 100th season, AWS and the NFL will innovate together to shape the future of football.

The Potential to Transform Football

- ✓ **Reducing concussions:** The NFL and AWS will collaborate in an effort to develop computer vision models that automatically detect the moment when concussions occur and identify the forces that cause them. AWS will do this by training deep learning models to track helmets and identify, detect, and classify injury-significant events and collisions.
- ✓ **Reducing lower extremity injuries:** Over time, the techniques developed to detect and prevent concussion may be extended to reduce a wide range of injuries, such as foot, ankle, and knee injuries.
- ✓ **Providing a framework for equipment manufacturers:** The aggregated, anonymized data will be stored in a "data lake," part of a multi-layer cloud-based architecture that will allow for re-use of data and provide the foundation for future innovation in protective equipment.
- ✓ **Measuring the impact of rules changes:** Game simulations will apply advanced techniques to understand the impact of rules changes so that new rules changes can be proposed and approved with additional confidence that the rule should have the intended effect.

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