

Brief: Attention
Monitoring for High
Intensity
Environments

Sports: Expert
Training using
Biometric
Techniques



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Introduction

VizKinect's patented technology offers professional and collegiate sport organizations a simple and cost effective solution to augment current training methods that can easily integrate with existing programs.

1. The Challenge

The demand for high performance in many sports applies constant pressure on teams and individuals. Training for younger players needs to be optimized and the time to train these highly potential athletes is being squeezed.

The challenge is driven by three primary factors: 1) there is a finite amount of time to prepare and train young players, 2) expert players, such as Peyton Manning at QB, have taken them years to hone their skills, and 3) raw talent of younger players needs to be developed and maximized through effective training.

In the photo to the right, Oakland Raiders quarterback, Terrelle Pryor (2) gets up off the turf after being sacked by the Denver Broncos in the third quarter of an NFL Monday Night football game. While there are a number of valid reasons for any QB to get sacked, the question can go back to—would more training have helped Terrelle pick up the blitz quicker or become more effective at reading the defensive alignments better?



Monday, Sept 23, 2013—Raiders vs the Broncos in Denver, CO

2. The Solution

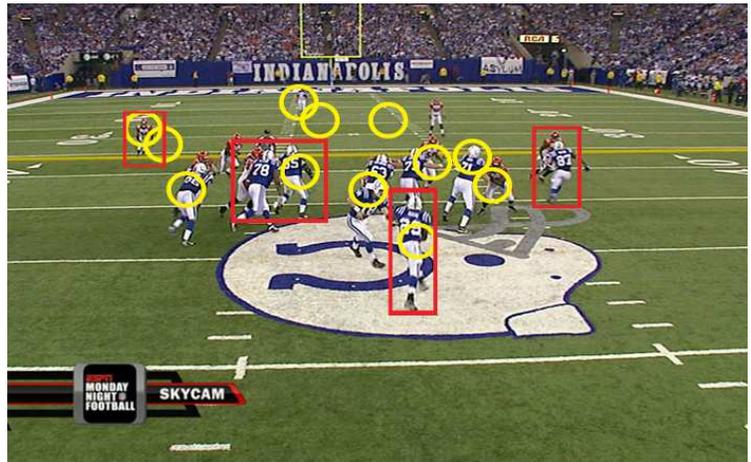
VizKinect offers a training tool that can gather insight into how expert players perform their skills; with the data output, sports organizations can enable younger or novice players to more easily learn by seeing how experts apply their years of playing competitive sports under intense game conditions. VizKinect has a different view of attention monitoring than many of our competitors. The world is changing and greater insights can offer tremendous value to accelerate training of highly skilled athletes.

3. Attention Monitoring

Using VizKinect’s eye-tracking analysis with **C.I.R.C.L.E.S.**™ technology, we offer the Active Attention System (AAS) that provides real-time data showing where players are looking when they survey the field in training environments. The image below illustrates a number of data gathering capabilities:

- CIRCLES

- Each circle represents where an individual is looking on a frame by frame basis. Each circle can identify individuals and the system can isolate any one circle or any grouping of circles by demographics, specific user info, and other metrics to determine trends.
- In real-time, the team can watch where players are looking and follow the path on how they survey the field. They can also watch where players look when they react to unexpected situations.
- On a frame by frame basis, the player can replay the video recording and compare their skills with others. In addition, they can also track their progress over time by combining different data sets over a training period.



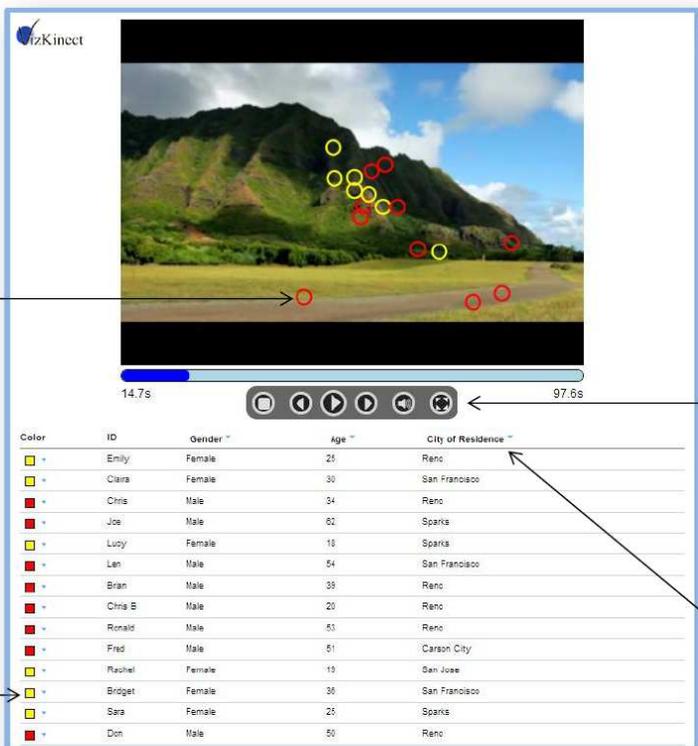
- Red rectangular boxes

- Each red box represents an Area of Interest (AOI). An AOI is a predetermined area that you may want to know if a player (expert or novice) is looking at and when. The system will automatically gather and display this collected data by users, by time, by sequence, and AOI.

- Navigation

- While it is not shown in the above, the VizKinect solution can also show the visual path of a player as they survey the field. You can see this on a frame by frame basis to follow what the players sees, when they see the play unfold, what draws their attention, and more importantly, what they may not see when they should see it.

- The VizKinect Player
 - Shown below, is a screenshot of the VK Player which is our user interface; it allows you to manipulate the colors of the circles to differentiate players individually or by position, observe the demographic data for each participant, and see which circle belongs to which participant. The VK Player can be customized to show any category and application that may be needed to support training of players across many positions.



You can click on the colored circles in the video to isolate which participant each represents

Video controls allow you to play, pause, view full screen, and even watch frame-by-frame

Visually differentiate participant demographics by color

Contact us at any time to receive further demographic information about all of the participants

Color	ID	Gender	Age	City of Residence
Yellow	Emily	Female	25	Reno
Yellow	Claire	Female	30	San Francisco
Red	Chris	Male	34	Reno
Red	Joe	Male	62	Sparks
Yellow	Lucy	Female	18	Sparks
Red	Len	Male	54	San Francisco
Red	Brian	Male	39	Reno
Red	Chris B	Male	20	Reno
Red	Ronald	Male	55	Reno
Red	Fred	Male	51	Carson City
Yellow	Rachel	Female	19	San Jose
Yellow	Bridget	Female	36	San Francisco
Yellow	Sara	Female	25	Sparks
Red	Don	Male	50	Reno

VizKinect is non-intrusive and can be easily integrated into existing training and computer systems to augment existing operational capabilities. This can be performed in a new or after-market condition without costly or major modifications.

4. Other Value Based Analyses Available from VizKinect

VizKinect has developed patent-pending technology and has been validated in several other market areas, including:

- Active Attention System application in Medical, Transportation, Heavy Machinery, Mining, and other industrial environments
- TV Commercial, Website Usability, and Mobile Media Ad Analysis
- Product Placement Analysis (Motion Picture, Television Programming)
- Print Analysis (Magazine, Newspaper, Mailer)
- Outdoor Analysis (Billboard, Bus Stop, Mall Signage)
- Expert Training Video Production/Analysis for Trainees in high performance areas
- Legal Animation Video Production/Analysis
- Biosensor Analysis (Neural Optical, Pulse Rate: Panelist reaction to visual content)

5. Conclusion

The simple adaptation of the VizKinect system can provide additional insights into how players react in game conditions and has the potential to accelerate the training of players to achieve their highest potential.

VizKinect is eager to explore working with professional sports organizations. We encourage you to try us out and see the difference we can offer.