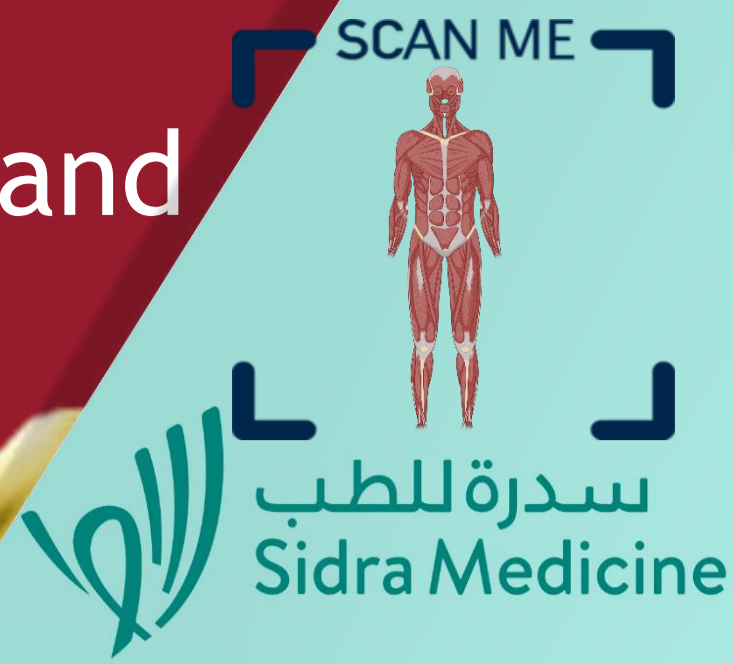


# AI-Powered Computer Vision Techniques for Real-Time Padel Player Tracking and Injury Prevention: A Revolutionary Approach for Training and Improving Performance with HYYN.AI Mobile App

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Welcome to our tech-focused conference! Our poster presentation features an innovative AR experience that you can access by scanning the image below. See the concepts come to life and get a deeper understanding of the topic at hand.

Don't forget to turn up the volume on your device for an explanation. During the networking breaks, feel free to connect with the presenters to discuss the topic further.

Thanks for joining us!

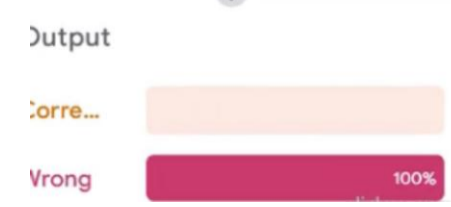


## INTRODUCTION

HYYN.AI offers accurate guidance on padel techniques using cutting-edge AI technology. The platform also provides real-time feedback on training specific muscle groups, enabling players to optimize their performance over time. In addition to these core features, HYYN.AI also offers guidelines on stretching and dietary factors for players to achieve their peak performance. As one of the few A.I applications in the padel market, HYYN.AI is set to revolutionize the way people play padel in Qatar. With the increasing popularity of padel and A.I applications in sports, the demand for HYYN.AI is set to skyrocket. Moreover, female players can train more comfortably since they won't require male trainers. Additionally, with HYYN.AI, players save time as there is no need for a personal trainer to get to know them first. Qatar has a rich history of hosting international sports events, including the 2006 Asian Games, the 2015 Men's Handball World Championship, the 2015 World Boxing Championships, the FIFA Club World Cup Qatar, and annual international tournaments. With the upcoming 2022 World Cup, the demand for innovative sports technologies like HYYN.AI is set to rise in Qatar.

## METHODS

HYYN.AI is an app that uses computer vision techniques such as object detection, motion tracking, pose estimation, and image segmentation to track player position and movements during a game of padel. These techniques are used in conjunction with machine learning algorithms to provide real-time feedback to players and coaches, assessing the correctness of the player's technique and identifying potential injury risks. The app has the potential to revolutionize the way players train and improve their performance, as well as prevent and diagnose injuries.



Live demo of app. In the Vodafone Hackathon in AI Week, the proposed app for padel injury prevention and training that uses mobile camera to track player position was awarded 3rd place. The app's innovative technique, which utilizes advanced computer vision algorithms to analyze players' movements and provide real-time feedback, impressed the judges with its potential to revolutionize the way people play padel and significantly reduce the risk of injuries associated with the sport. The recognition of the app's potential in the hackathon is a testament to the power of AI technology in improving sports training and injury prevention.

## APP INTERFACE

### Mobile App Dashboard Infographics

The Coach Tips screen shows two images of a player with red boxes highlighting specific body parts. The Contractility screen displays a line graph for Biceps, brachialis, and Triceps. The Injury Profile screen shows a provisional diagnosis of a suspected torn tendon at the triceps head and a button to report to a physician.

### Mobile App Dashboard

The Connect Devices screen lists Sensor Y, Sensor Z, and Smartwatch. The Game Summary screen shows a 70% overall performance gauge. The Detailed Summary screen shows a line graph for Hussein and a button to access the coach.

## REFERENCES

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