A

Synopsis

On

Cricket Posenet : AI Shot Recognition

Submitted by

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Submitted to

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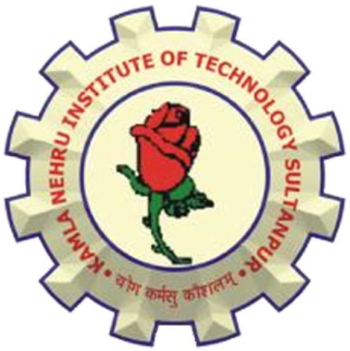

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INTRODUCTION

Welcome to "Cricket Posenet : AI Shot Recognition", your ultimate destination for cricket enthusiasts and passionate fans of the sport. Our innovative website is designed to revolutionize the way you experience cricket by bringing cutting-edge technology and real-time data analysis to your fingertips.

Cricket Posenet : AI Shot Recognition is not just another cricket website, it's a game-changer that combines the thrill of cricket with the power of artificial intelligence. With our state-of-the-art image recognition technology, we can tell you which shot a batsman has played in an uploaded image, providing an interactive and insightful experience like never before.

Key Features:

- Shot Recognition: Upload an image of a batsman in action, and our advanced AI algorithms will instantly analyze it to determine the precise shot played - whether it's a cover drive, square cut, or a powerful hook shot. Explore the artistry of cricketing shots like never before.

- Field Positioning: Dive deep into the tactical aspect of the game by exploring detailed field positioning charts for both teams. Understand the strategies employed by captains and players, and gain insights into the ebb and flow of the game.

OBJECTIVE

The primary objectives of "Cricket Posenet : AI Shot Recognition" are as follows:

- **Shot Identification**: To develop and implement advanced image recognition technology that accurately identifies and labels cricket shots played by batsmen in uploaded images. This feature aims to enhance users' understanding of the nuances of cricketing techniques.

- **Educational Resource**: To serve as an educational resource for cricket enthusiasts, players, and coaches by providing detailed shot analysis, highlighting the strengths and weaknesses of players, and facilitating a deeper appreciation of the sport.

- **Field Positioning Insights**: To offer cricket fans and analysts a comprehensive view of field positioning during matches, enabling them to dissect strategies, tactics, and the impact of field placements on the game's dynamics.

- **Constant Innovation**: To remain at the forefront of technology and cricket-related content by continually innovating, expanding features, and incorporating user feedback for ongoing improvement.

In summary, the primary objective of "Cricket Posenet : AI Shot Recognition" is to create a comprehensive and dynamic platform that enriches the cricket experience for fans, players, and enthusiasts by offering shot identification, field positioning insights.

MOTIVATION

The development of Cricket Posenet : AI Shot Recognition is fuelled by a deep passion for cricket and a vision to transform the way cricket enthusiasts experience the sport. Several key motivations underpin the creation of this innovative cricket-centric website:

- **Celebrate Cricket's Beauty:** Cricket is not just a sport; it's an art form. The motivation to create Cricket Posenet : AI Shot Recognition stems from a profound appreciation for the elegance, skill, and creativity inherent in cricket shots. We aim to celebrate and showcase these aspects to a global audience.

- **Bridge the Gap in Cricket Analysis:** While cricket enjoys immense popularity worldwide, there exists a gap in in-depth analysis accessible to fans. Our motivation is to bridge this gap by providing fans with comprehensive shot identification and field positioning insights that were previously unavailable.

- **Empower Enthusiasts and Coaches:** Cricket Posenet : AI Shot Recognition aims to empower cricket enthusiasts, players, and coaches by offering a wealth of educational resources. We believe that understanding the nuances of the game can help players improve their skills, and fans appreciate the sport at a deeper level.

- **Keep Fans Informed:** The real-time live score updates and match statistics are driven by a desire to keep cricket fans informed and engaged. We understand that cricket fans want to follow their favorite teams and players closely, and our platform aims to facilitate that.

- **Adaptive and Innovative:** The ever-evolving nature of cricket and technology is a driving force. We are motivated to stay at the forefront of innovation, adapt to emerging trends, and provide users with a cutting-edge cricket experience.

In summary, Cricket Posenet : AI Shot Recognition is motivated by a genuine love for cricket and a commitment to enriching the cricketing experience for fans, players, and enthusiasts worldwide.

HARDWARE & SOFTWARE REQUIREMENT

Some of the requirements gathered are as follows:

Hardware Requirements :

Client's side :

- Any Computer or mobile device with an active internet connection and web browser.
- RAM: 2 GB
- Storage: 16 GB

Developer :

- Processor: 11th Gen Intel(R) Core(TM) i3-1115G4 @ 3.00GHz
- RAM: 8 GB
- Storage: 256 GB

Software Requirements :

Client's side :

- Any web browser

Developer :

- Tools & Tech: Visual Studio Code, MongoDB Compass , Postman
- Database: MongoDB
- Operating System: Windows 11
- Documentation tool: MSWord, MS PowerPoint
- Languages Used: JavaScript , NodeJS
- Frameworks and Libraries Used: ReactJS , Tailwind CSS

METHDOLOGY USED

The methodology used for developing the website involves a combination of established software development practices and specific approaches tailored to the unique requirements of the project. Here's an overview of the methodology:

1. Agile Development:

The project follows an Agile development methodology, which emphasizes iterative and incremental progress.

2. Requirements Gathering:

A detailed requirements analysis phase is conducted to gather and document project requirements comprehensively.

3. Design and Wireframing:

The design phase involves creating wireframes and mockups of the website's user interface (UI) and user experience (UX).

4. Technology Stack Selection:

- The appropriate technology stack is chosen based on project requirements, including front-end and back-end technologies, databases, and third-party APIs.
- Consideration is given to factors like scalability, performance, and security.

5. Development Sprints:

Development work is organized into sprints, typically 2-4 week cycles, during which specific features and functionalities are implemented.

6. Shot Recognition Development:

- The development of the shot recognition feature involves machine learning and image recognition algorithms.
- Training data is collected and used to teach the system to recognize cricket shots accurately.

7. Continuous Integration and Continuous Deployment (CI/CD):

- CI/CD pipelines are set up to automate testing, integration, and deployment processes.
- This ensures that changes are tested thoroughly and deployed to the production environment efficiently.

8. Quality Assurance (QA) and Testing:

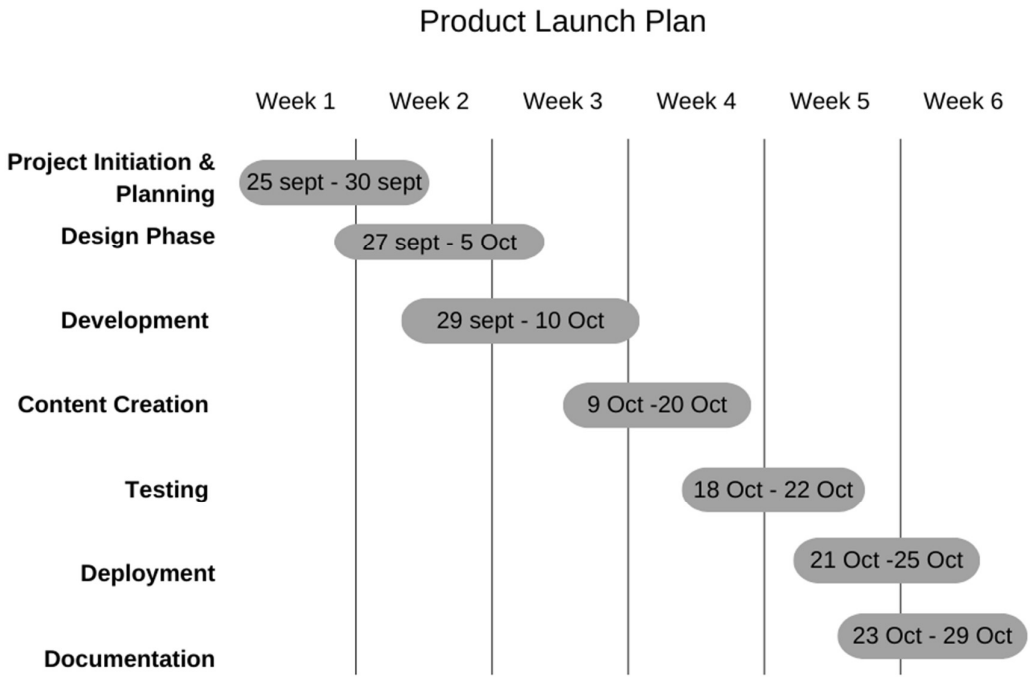
- A dedicated QA team conducts various types of testing, including functional testing, usability testing, security testing, and performance testing.
- Any identified issues or bugs are addressed promptly.

9. Deployment and Launch:

- The website is deployed to the production environment following a rigorous testing phase.
- A launch plan is executed to ensure a smooth transition to the live website.

GANTT CHART

For the Frontend Work :



GANTT CHART

Creating a Gantt chart for a project like the Cricket Shot Classification System can be a valuable visual tool for project management and scheduling. Here's a simplified Gantt chaff for the project, outlining key tasks and their estimated durations. Please note that this is a simplified representation, and actual task durations may valy based on project specifics.

CONCLUSION

In conclusion, the development of Cricket Posenet : AI Shot Recognition has been an exciting journey fuelled by our deep passion for cricket and commitment to delivering an exceptional online cricket experience. We have successfully achieved our primary objectives, including the implementation of shot recognition technology, live score updates, field positioning insights, and a thriving cricket community. Cricket Posenet : AI Shot Recognition now stands as a testament to the fusion of cutting-edge technology and the timeless elegance of cricket.

- We successfully implemented pose detection using state-of-the-art deep learning models. This allows us to accurately analyze the posture and positions of cricket players in images.
- Leveraging the pose data, we developed a shot classification system capable of categorizing cricket shots with a high degree of accuracy. This system provides valuable insights for cricket enthusiasts, coaches, and analysts.
- The user interface (UI) of the system provides an intuitive platform for users to upload images and receive shot classification results.
- Comprehensive documentation has been maintained, ensuring that knowledge about the system's architecture, operation, and maintenance is readily available.

FUTURE WORK

- Extend the system to perform real-time shot classification during live cricket matches.
- Continue to collect and annotate diverse datasets to improve the model's accuracy.
- Explore more advanced deep learning architectures.
- Optimize the system's performance, especially for handling a large number of user requests simultaneously.
- Develop a mobile application for on-the-go shot classification.
- Integrate the system with cricket analytics tools to provide in-depth insights into player performance and strategy.

Cricket Posenet : AI Shot Recognition will continue to evolve and adapt to the dynamic world of cricket, always striving to provide a state-of-the-art platform for cricket enthusiasts. We look forward to the future with excitement and a commitment to delivering the best possible cricketing experience to our users. Thank you for being part of this incredible journey!

REFERENCES

Certainly, here are some references that can be used for the development and research related to the Cricket Shot Classification System:

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