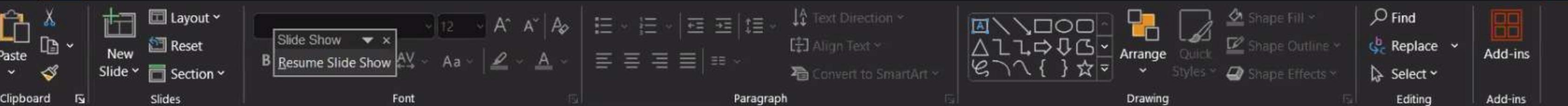


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 - 4. Market Segmentation Analysis Using ML
 - 5. Market Segmentation Analysis Using ML

Use case - 1:

Market Segmentation Analysis Using ML



- In this report, we are going through the Steps of Market segmentation and covering the basic idea of market segmentation. We will be covering all the instruction or procedure you have to keep in mind during the market segmentation.
- The purpose of marketing is to match the genuine needs and desires of consumers with the offers of suppliers particularly suited to satisfy those needs and desires. This matching process benefits consumers and suppliers, and drives an organization's marketing planning process.

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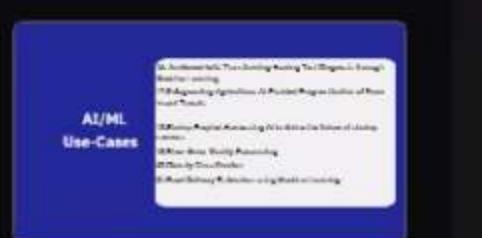
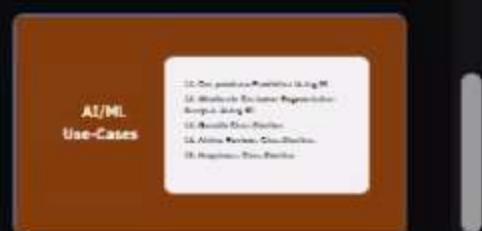
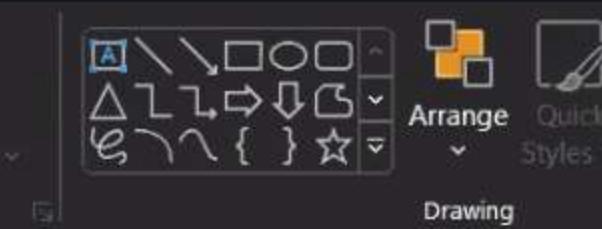
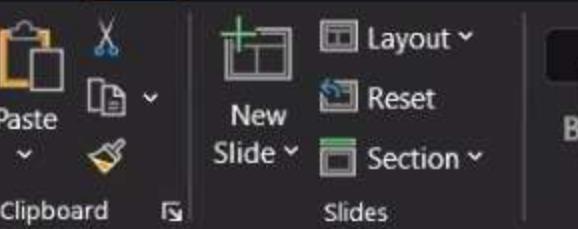


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Use case - 1:

Market Segmentation Analysis Using ML



Social impact: Market segmentation analysis, when applied with a focus on social impact, aims to understand and address the specific needs and challenges of various groups within a society or community. This type of analysis can help organizations, non-profits, and government agencies better allocate resources, tailor programs, and create policies that have a positive impact on people's lives. Here are some ways market segmentation analysis can be used for social impact:

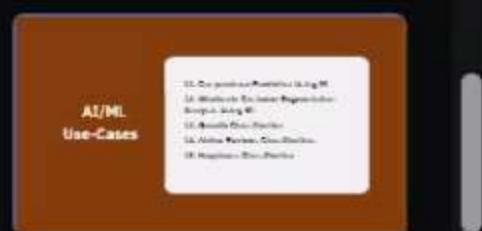
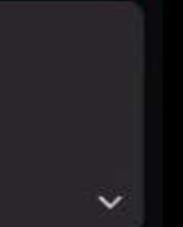
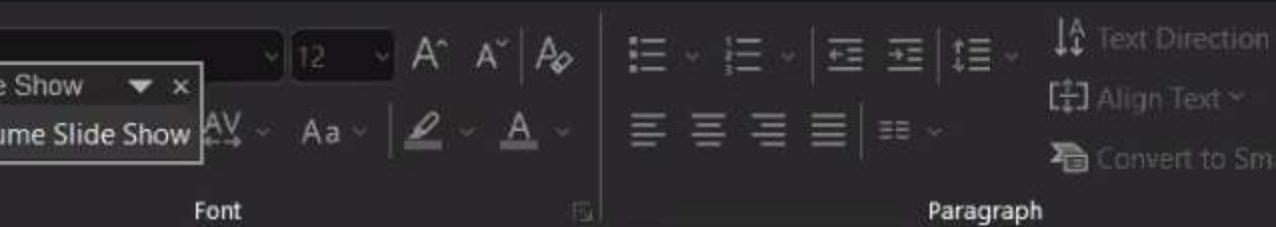
Recommended Technology Stack
Machine learning, Python, Flask, etc.

References
https://ijcrt.org/papers/IJCRT_196519.pdf

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Use case - 2:

Maple Syrup Price Prediction using LSTM



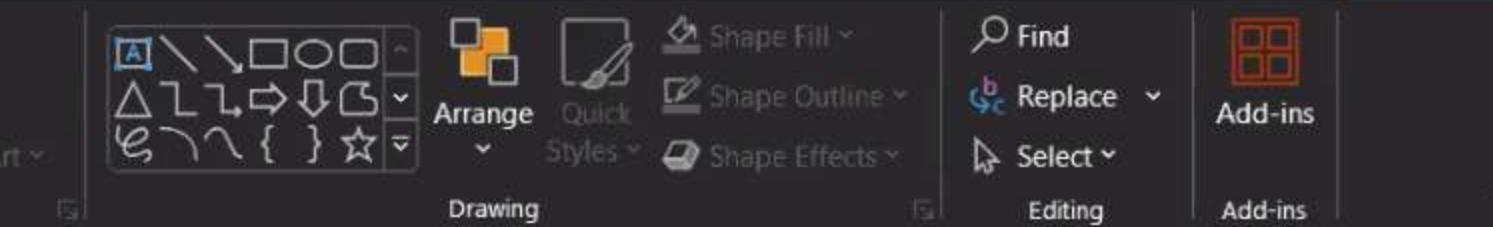
Bleeding Edge Prognostics: The Future of Blood Donation is a pioneering machine learning project aimed at revolutionizing the blood donation ecosystem. This project's primary objective is to develop advanced predictive models utilizing cutting-edge data analytics and artificial intelligence techniques. By analyzing vast datasets encompassing donor behavior, supply-demand dynamics, and historical health records, the project seeks to forecast blood donation trends with remarkable accuracy..

These prognostics are crucial for blood banks and healthcare institutions to proactively manage their inventory, optimize donation campaigns, and ensure a stable and sufficient blood supply.

Furthermore, the project's machine learning models will not only predict future donation patterns but also identify potential donors based on demographics, health profiles, and past behavior, thereby expanding the donor pool and enhancing the efficiency of blood donation drives.

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Use case - 2:

Maple Syrup Price Prediction using LSTM



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Social Impact: Accurate maple syrup price prediction has the potential to benefit maple syrup producers, consumers, and communities by providing stability, promoting sustainability, and preserving cultural traditions. However, proper regulation and attention to potential negative consequences are essential to ensure that the social impact remains positive and equitable. It's important to consider the broader social and environmental context when implementing price prediction strategies in the maple syrup industry.

Business Model/Impact

The business impact of maple syrup price prediction can be significant, particularly for maple syrup producers and related industries. Accurate price predictions can affect business operations, profitability, and strategic decision-making.

Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.

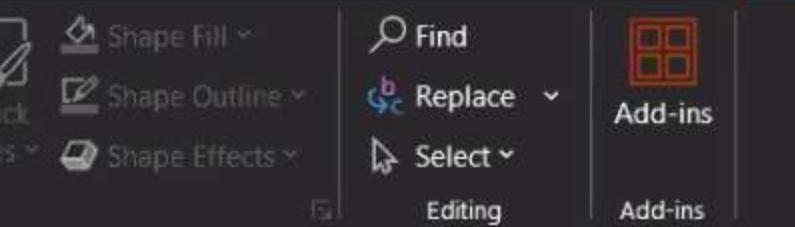
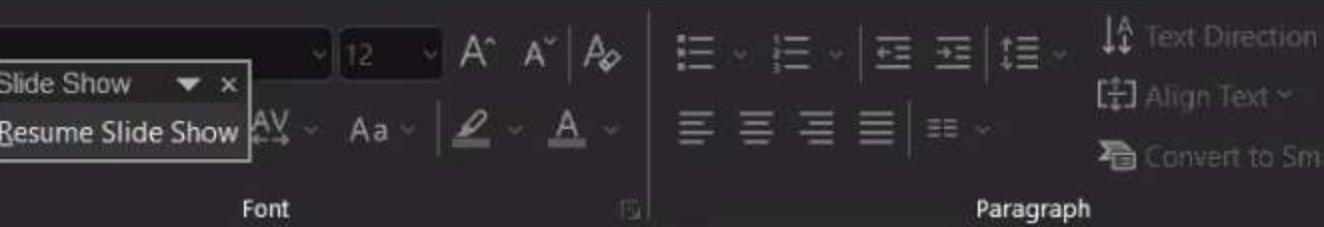
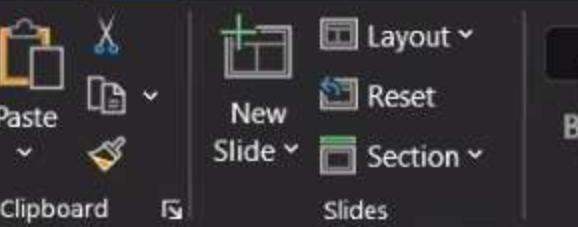
References

https://www.researchgate.net/publication/348390803_Stock_Price_Prediction_Using_LSTM

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Use case - 3:

BallFusion: Unravelling the Variety of Sports Balls in Multiclass Image Classification Learning



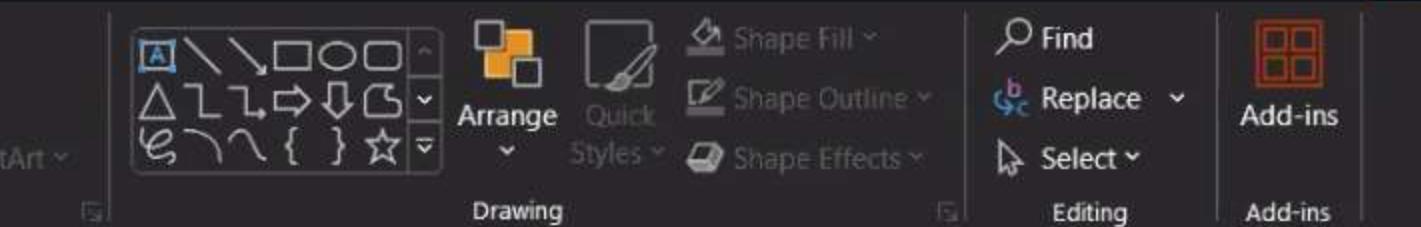
Convolutional Neural Networks (CNNs) are a type of neural network that is commonly used in image classification tasks. CNNs are designed to take in input data in the form of images and process the data through multiple layers, each of which applies a different set of filters to the data to extract different features. In this project, we aim to develop a CNN model to classify images of sports balls into their respective classes using a dataset containing various images of sports balls.

The dataset includes images of sports balls from 15 different sports, including basketball, soccer, tennis, and more. We will be training the model on this data and evaluating its performance in classifying sports balls accurately. The development of accurate sports ball classification models using CNNs has the potential to transform how we recognize and categorize images of sports balls, providing more accurate and personalized results than traditional methods. This project can have significant implications in various domains such as sports, gaming, and fitness.

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Use case - 3:

BallFusion: Unravelling the Variety of Sports Balls in Multiclass Image Classification



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Social Impact:

The "BallFusion" project has the potential to make a positive social impact by combining sports and technology, promoting education, inclusivity, innovation, and community engagement. It can be a catalyst for various sectors, from education to sports, and contribute to the well-being and development of individuals and communities.

Business Model/Impact

The project like "BallFusion: Unravelling the Variety of Sports Balls in Multiclass Image Classification" can have a substantial business impact by enhancing the customer experience, increasing sales, improving inventory management, and providing valuable insights into consumer preferences and market trends. This technology has the potential to revolutionize the way sports-related products are marketed and sold, benefiting both retailers and consumers.

Recommended Technology Stack

Machine Learning, Deep learning, Python, Flask, etc.

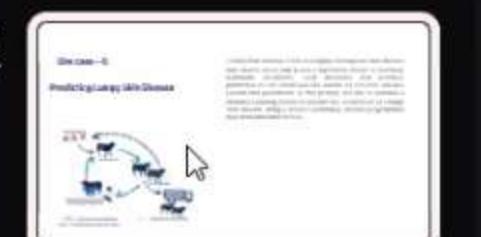
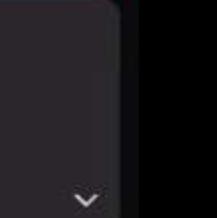
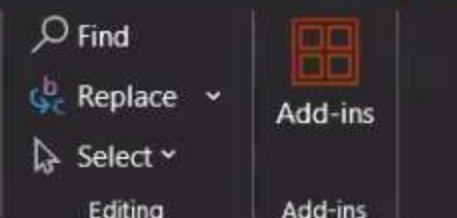
References

https://www.researchgate.net/figure/Example-of-a-classification-problem-of-4-different-sports-balls-Note-how-One-vs-All-or_fig2_273005304

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Use case - 4:

Predicting Lumpy Skin Disease

Lumpy Skin Disease (LSD) is a highly contagious viral disease that affects cattle and poses a significant threat to livestock industries worldwide. Early detection and accurate prediction of LSD outbreaks are crucial for effective disease control and prevention. In this project, we aim to develop a machine learning model to predict the occurrence of Lumpy Skin Disease using a dataset containing various geographical and environmental factors

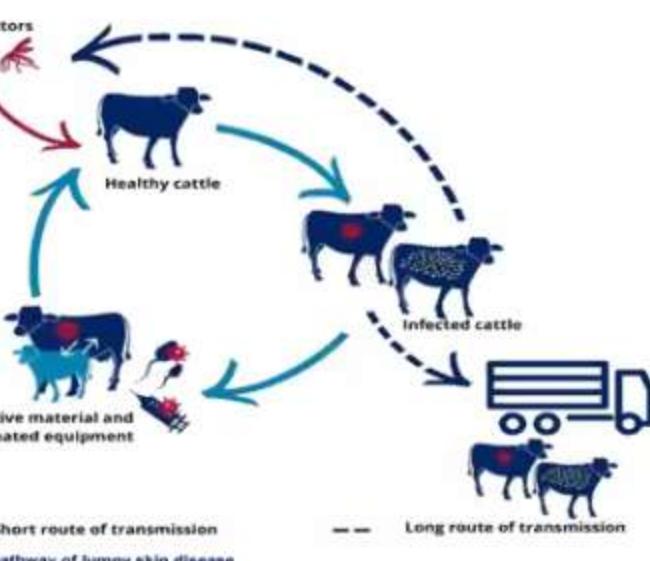


Figure 1. Viral pathway of lumpy skin disease

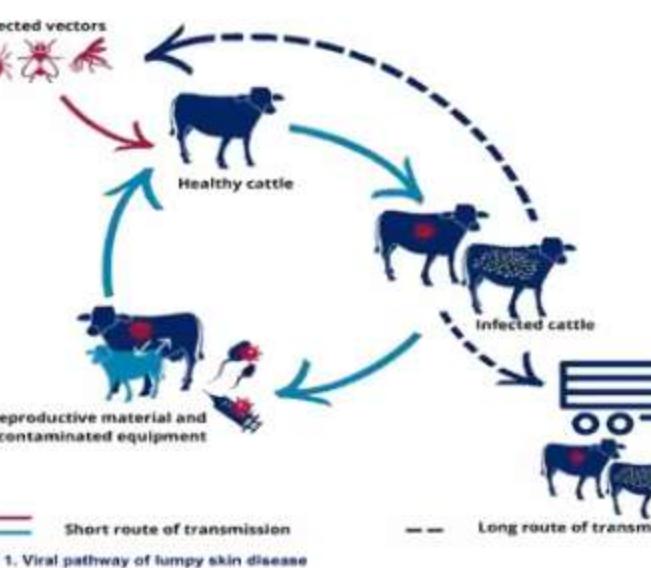
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Use case - 4:

Predicting Lumpy Skin Disease



Social Impact:

This predicting and controlling Lumpy Skin Disease has the potential to create a significant social impact by protecting livelihoods, ensuring food security, maintaining economic stability, improving animal welfare, and contributing to public health. It empowers communities to mitigate the effects of this disease and promotes sustainable livestock management.

Business Model/Impact

predicting LSD outbreaks in the livestock industry can lead to significant business impacts by reducing financial losses, ensuring a stable supply chain, enhancing animal welfare, and promoting trade opportunities. It also encourages data-driven decision-making and collaboration across the sector, ultimately benefiting stakeholders from cattle farmers to pharmaceutical companies.

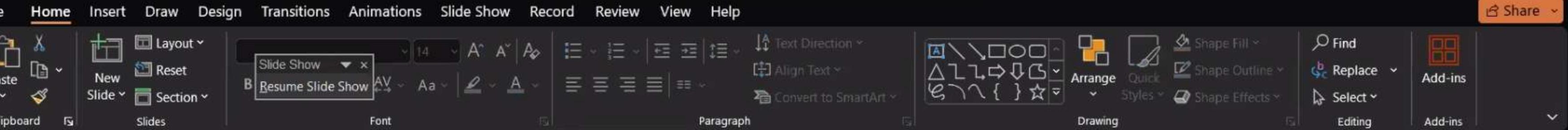
Recommended Technology Stack

Machine Learning, Deep learning , Python, Flask, etc.

References

https://www.researchgate.net/publication/352614678_A_Deep_Learning_Approach_to_Detect_Lumpy_Skin_Disease_in_Cows#:~:text=We%20developed%20a%20machine%20learning,is%20known%20as%20DenseNet%2D121.

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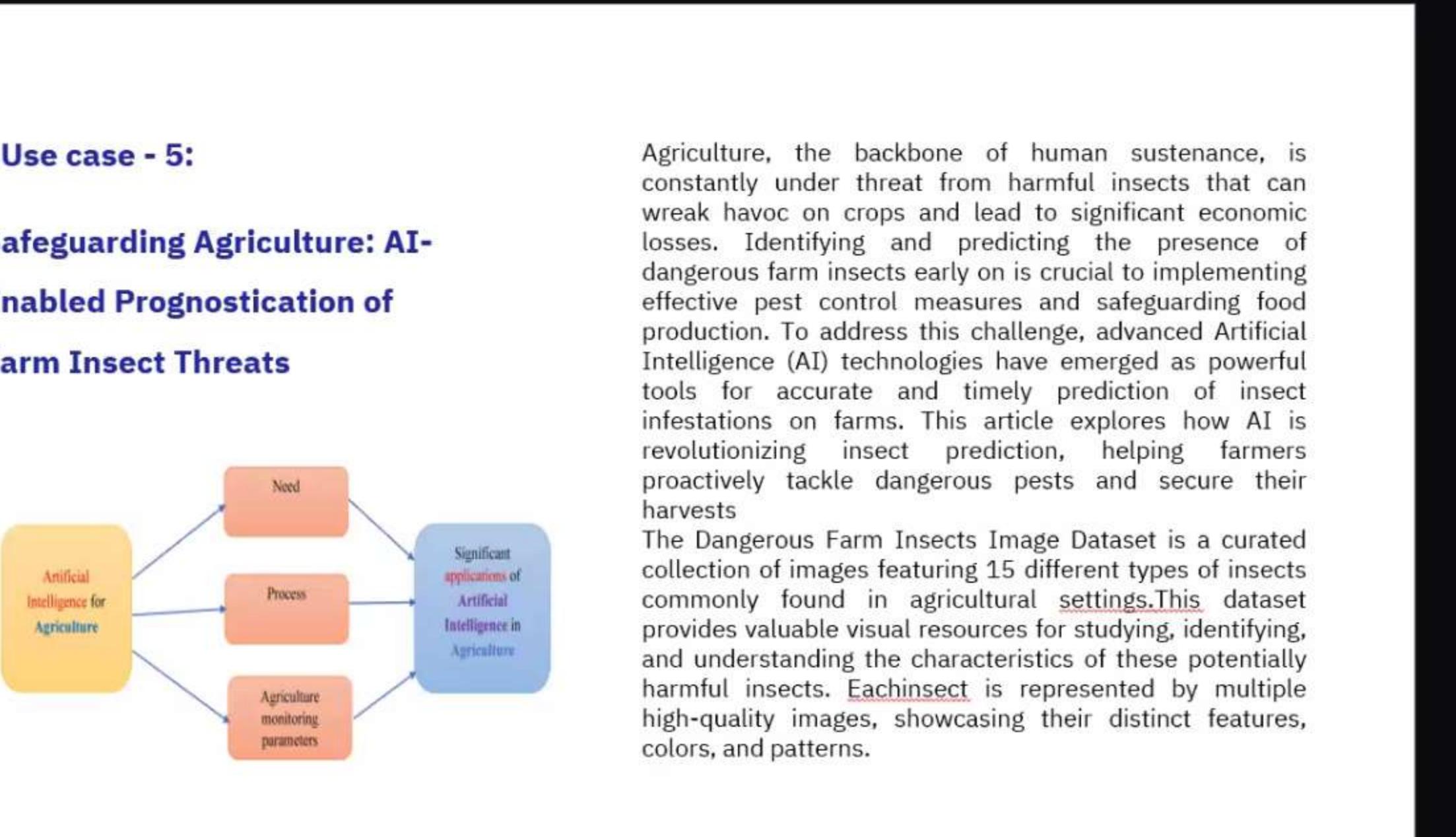


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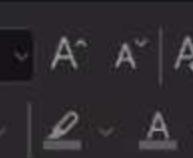
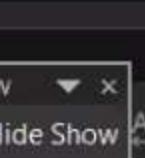
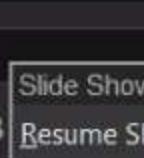
Agriculture, the backbone of human sustenance, is constantly under threat from harmful insects that can wreak havoc on crops and lead to significant economic losses. Identifying and predicting the presence of dangerous farm insects early on is crucial to implementing effective pest control measures and safeguarding food production. To address this challenge, advanced Artificial Intelligence (AI) technologies have emerged as powerful tools for accurate and timely prediction of insect infestations on farms. This article explores how AI is revolutionizing insect prediction, helping farmers proactively tackle dangerous pests and secure their harvests.

The Dangerous Farm Insects Image Dataset is a curated collection of images featuring 15 different types of insects commonly found in agricultural settings. This dataset provides valuable visual resources for studying, identifying, and understanding the characteristics of these potentially harmful insects. Each insect is represented by multiple high-quality images, showcasing their distinct features, colors, and patterns.

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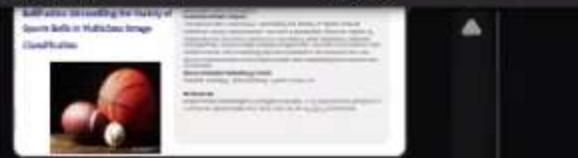
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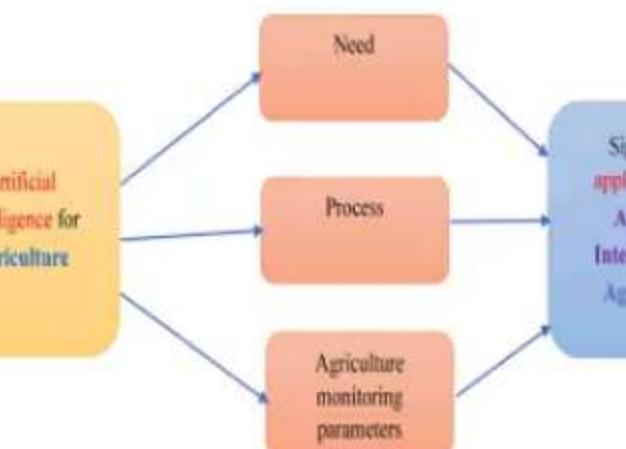
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Use case - 5:

Safeguarding Agriculture: AI-Enabled Prognostication of Farm Insect Threats



Social Impact:

AI-enabled pest prediction in agriculture has the potential to positively impact food security, farmer livelihoods, sustainable agriculture, environmental health, and overall well-being in rural communities. It can contribute to the resilience of agriculture in the face of pest threats and promote economic growth while reducing the environmental footprint of farming practices.

Business Model/Impact

The business impact of AI-enabled prognostication of farm insect threats in agriculture includes increased yield protection, cost reduction, sustainable practices, and higher profit margins. It promotes data-driven decision-making, fosters innovation, and supports the overall stability and sustainability of the agricultural industry.

Recommended Technology Stack

Machine Learning, Artificial Intelligence, Python, Flask, etc.

References

https://www.researchgate.net/publication/373439287_Artificial_Intelligence_in_Agriculture_A_Review

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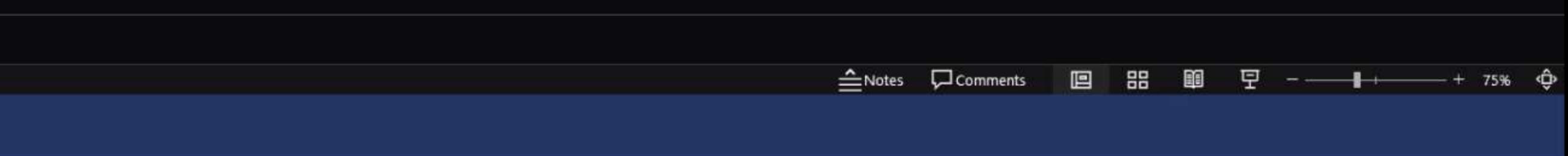
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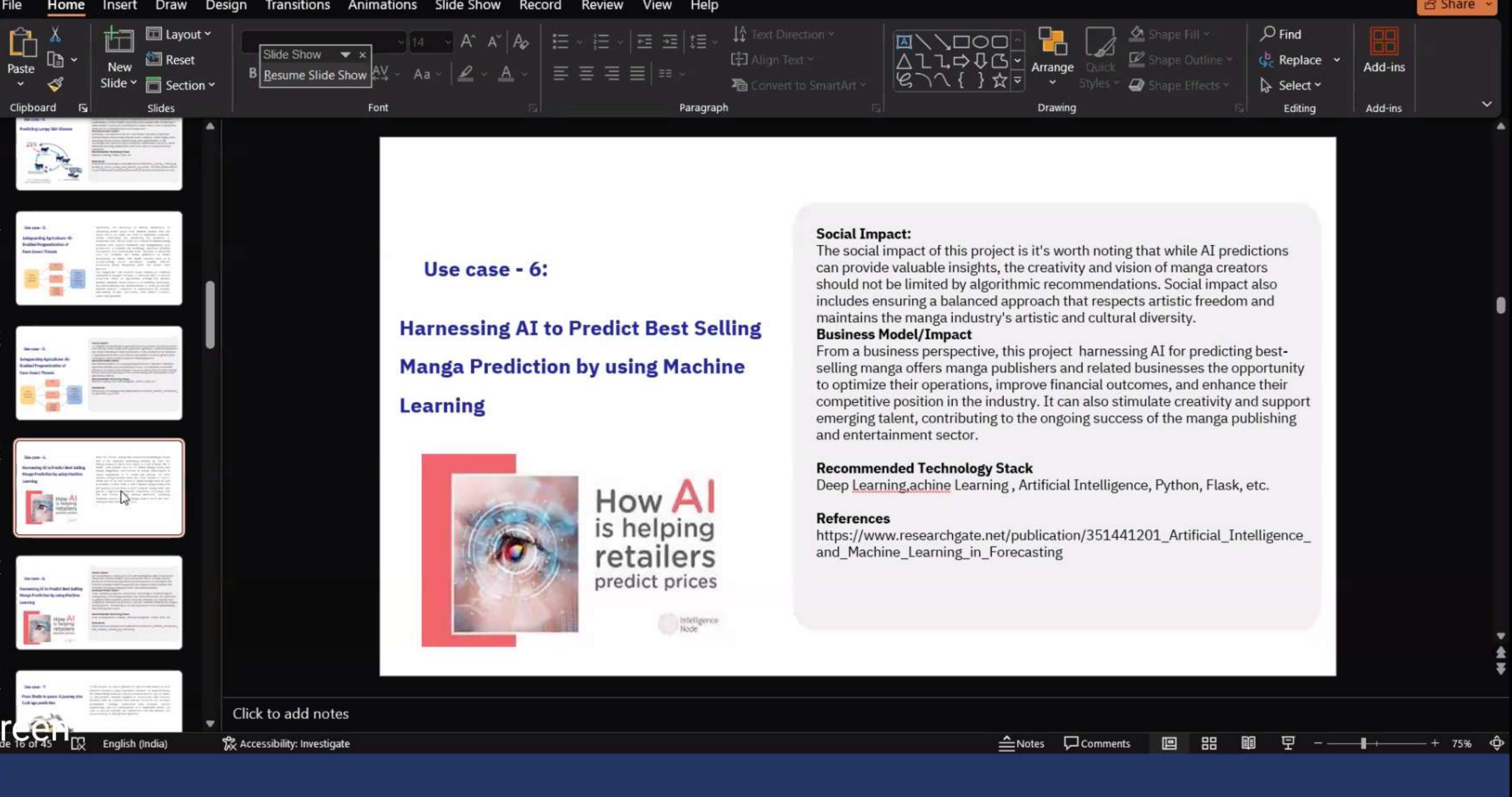
Use case - 6: Harnessing AI to Predict Best Selling Manga Prediction by using Machine Learning



Since the 1950s, manga has become an increasingly major part of the Japanese publishing industry. By 1995, the manga market in Japan was valued at ¥586.4 billion (\$6–7 billion) with annual sales of 1.9 billion manga books and manga magazines (also known as manga anthologies) in Japan (equivalent to 15 issues per person). In 2020, Japan's manga market value hit a new record of ¥612.6 billion due to the fast growth of digital manga sales as well as increase of print sales. In 2022, Japan's manga market hit yet another record value of ¥675.9 billion. Manga have also gained a significant worldwide readership. Beginning with the late 2010s, manga started massively outselling American comics. Now the Manga want to know the Best-Selling Mangas from Past to Now.



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Use case - 7:

From Shells to years: A journey into Crab age prediction



In this project, we aim to predict the age of crabs based on their physical attributes using regression analysis. By understanding the relationship between various features and the age of crabs, we can provide valuable insights to commercial crab farmers, enabling them to optimize their harvest decisions and increase profitability. Through exploratory data analysis, feature engineering, and the development of a regression model, we seek to uncover patterns and correlations that will enhance our understanding of crab growth dynamics.

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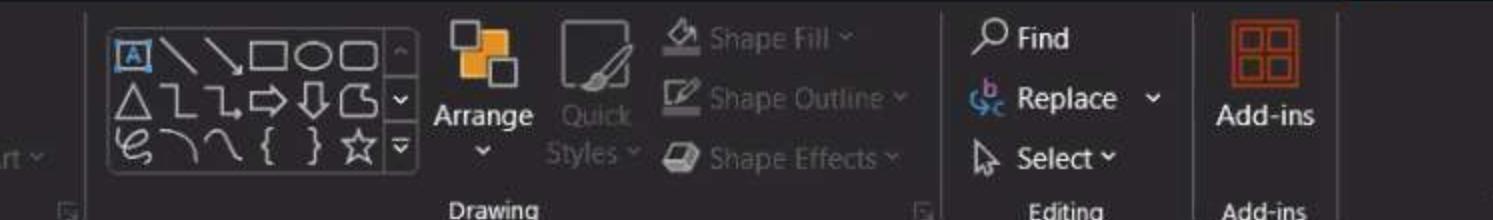
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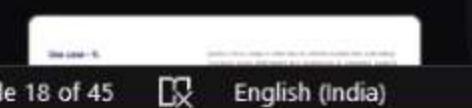
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Use case - 7:

From Shells to years: A journey into Crab age prediction



Social Impact

The social impact of this project is "From Shells to Years: A Journey into Crab Age Prediction" has the potential to contribute to marine ecosystem understanding, conservation efforts, and the sustainable management of crab populations. It also promotes environmental stewardship, scientific advancement, and education, benefiting both marine life and the communities that depend on healthy marine ecosystems.

Business Model/Impact

The project on crab age prediction can lead to various business impacts, including sustainability in crab fisheries, improved product quality, value-added product development, compliance with regulations, and data-driven decision-making. It also opens doors for marketing strategies that emphasize environmentally responsible practices, contributing to the long-term success of businesses in the marine and seafood industries.

Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.

References

https://www.researchgate.net/publication/251572943_Direct_determination_of_age_in_shrimps_crabs_and_lobsters

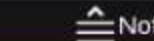
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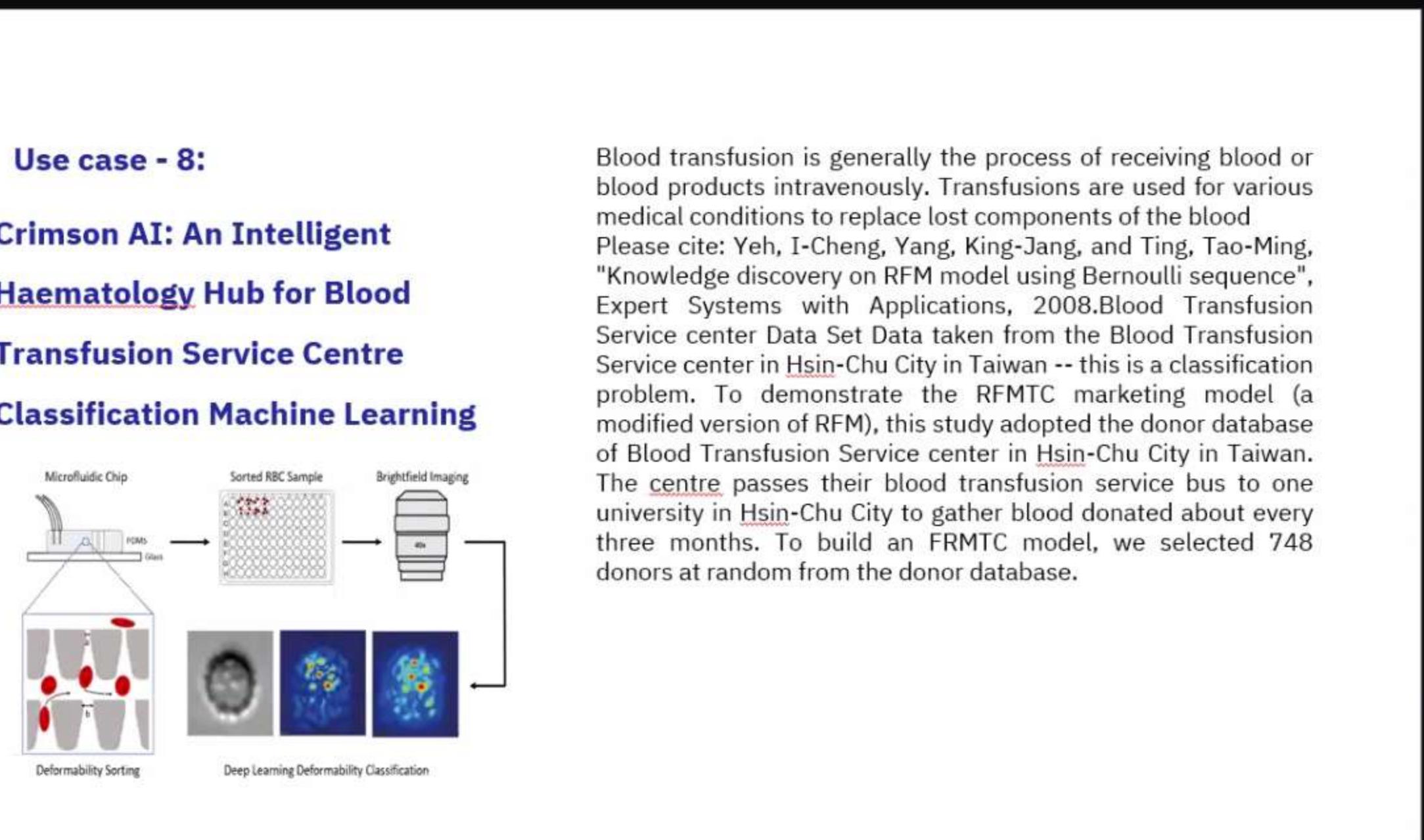
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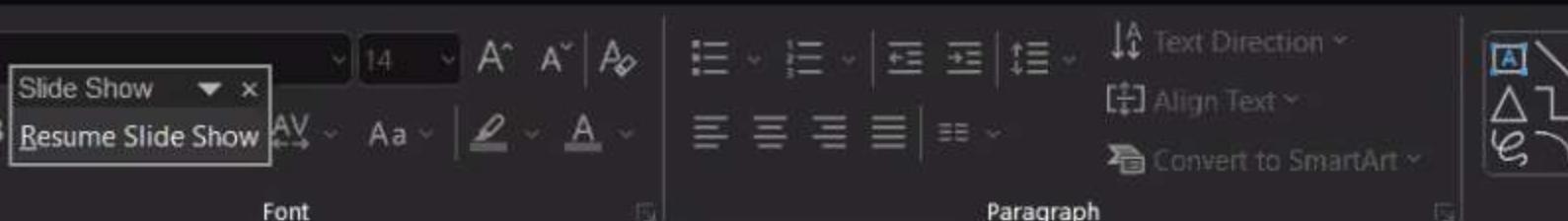
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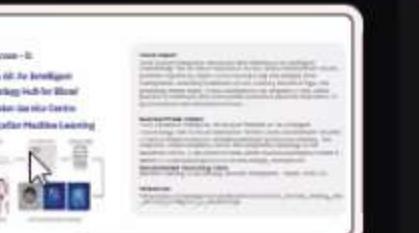
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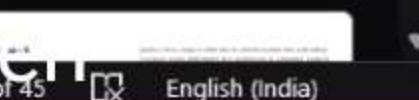


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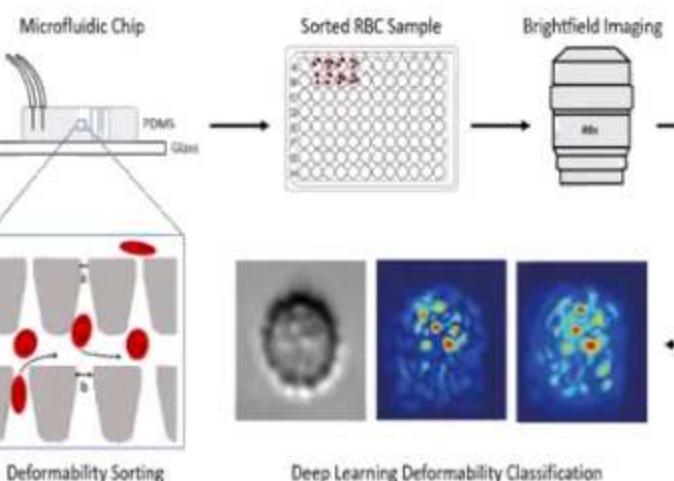
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Use case - 8:

Crimson AI: An Intelligent Haematology Hub for Blood Transfusion Service Centre Classification Machine Learning



Social Impact

From a social perspective, this project has Crimson AI: An Intelligent Haematology Hub for Blood Transfusion Service Centre Classification" has the potential to positively impact society by improving blood supply chain management, enhancing healthcare access, reducing blood shortages, and promoting patient safety. It also contributes to the adoption of data-driven practices in healthcare and fosters public awareness about the importance of blood donation and transfusion services..

Business Model/Impact

From a business standpoint, the project "Crimson AI: An Intelligent Haematology Hub for Blood Transfusion Service Centre Classification" can lead to various business impacts, including improved operational efficiency, cost reduction, enhanced quality control, and competitive advantage in the healthcare sector. It also promotes data-driven decision-making and fosters a culture of continuous improvement in blood supply management.

Recommended Technology Stack

Machine Learning, Deep learning, Artificial Intelligence, Python, Flask, etc.

References

https://www.researchgate.net/publication/342573510_Machine_learning_and_artificial_intelligence_in_haematology

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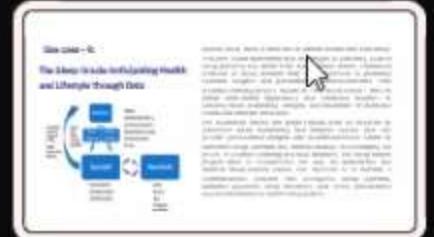
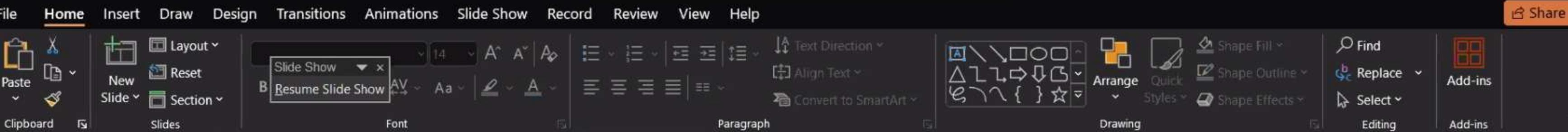
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Use case - 9:

The Sleep Oracle Anticipating Health and Lifestyle through Data

The diagram illustrates the 'Sleep Oracle' project's focus on Pandemic influences and its impact on Sleep health and Mental health. It shows a central box labeled 'Sleep health' connected to a box labeled 'Mental health' by a double-headed arrow. Above these boxes, a box labeled 'Pandemic' has arrows pointing to both 'Direct influence' and 'Indirect influence'. 'Direct influence' points to 'Sleep health', while 'Indirect influence' points to 'Mental health'. Arrows from the Pandemic box also point to a list of factors: Lockdowns, Social isolation and distancing, Lack of psychological support, Decreased exposure to sunlight, Decreased physical effort, and Fake news. Another list of factors is shown below 'Sleep health': Increased sleep time, Decreased sleep quality, and Altered timing of sleep. Below 'Mental health' is a list: Anxiety, Depression, Stress, and Post traumatic stress disorder.

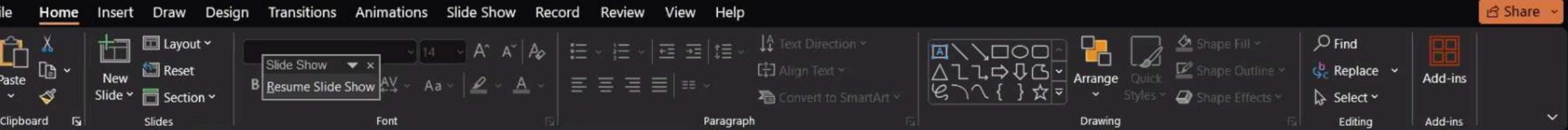
Quality sleep plays a vital role in overall health and well-being. However, many individuals face challenges in achieving optimal sleep patterns and suffer from sleep-related issues. Traditional methods of sleep analysis may have limitations in providing accurate insights and personalized recommendations. This machine learning project, known as "The Sleep Oracle," aims to utilize data-driven approaches and advanced analytics to enhance sleep monitoring, analysis, and prediction for improved health and lifestyle outcomes.

The motivation behind this project stems from the need for an innovative sleep monitoring and analysis system that can provide personalized insights and recommendations based on individual sleep patterns and lifestyle factors. By leveraging the power of machine learning and data analytics, The Sleep Oracle project aims to revolutionize the way we understand and address sleep-related issues. Our objective is to develop a comprehensive solution that anticipates sleep patterns, identifies potential sleep disorders, and offers personalized recommendations for better sleep quality.

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Use case - 9:

The Sleep Oracle Anticipating Health and Lifestyle through Data

The diagram illustrates the impact of the Pandemic on Sleep health and Mental health. It shows a central box labeled 'Sleep health' connected to a box labeled 'Mental health' by a double-headed arrow. Above these boxes, two arrows point downwards from a central box labeled 'Pandemic'. One arrow is labeled 'Direct influence' and the other is labeled 'Indirect influence'. The 'Direct influence' arrow points to 'Sleep health', while the 'Indirect influence' arrow points to 'Mental health'. To the left of the 'Pandemic' box, there is a list of factors: Increased risk, severity and prognosis of infection; Possible altered vaccine efficiency; Lockdowns; Social isolation and distancing; Lack of psychological support; Decreased exposure to sunlight; Decreased physical effort; and Fake news. To the right of the 'Sleep health' and 'Mental health' boxes, there is a list of symptoms: Increased sleep time; Decreased sleep quality; Altered timing of sleep; Anxiety; Depression; Stress; and Post-traumatic stress disorder.

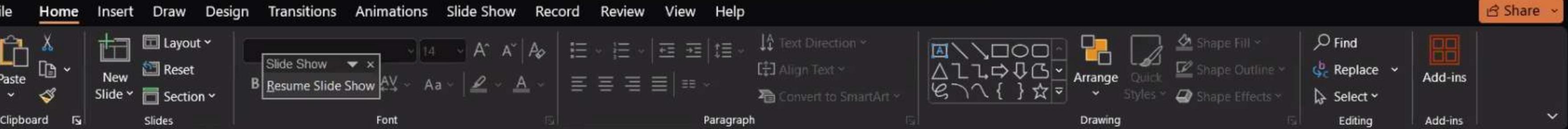
Social Impact
The social on the project "Sleep Oracle: Anticipating Health and Lifestyle through Data" project has the potential to positively impact society by improving health and well-being, promoting early health intervention, reducing stress, and raising public awareness about the importance of sleep in overall health. It empowers individuals to make informed decisions and potentially contributes to healthier, more productive communities.

Business Model/Impact
From a business perspective, the project "Sleep Oracle: Anticipating Health and Lifestyle through Data" project can create numerous business opportunities in the healthcare, wellness, and data analytics sectors. It enables organizations to offer more comprehensive and personalized services, improve employee well-being, and contribute to the development of innovative health solutions.

Recommended Technology Stack
Machine Learning, Artificial Intelligence, Python, Flask, etc.

References
https://www.researchgate.net/publication/335881671_Three_Important_Things_about_Quality_Sleep_For_Having_A_Healthy_Lifestyle

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Use case - 10:

GreenClassify: Deep Learning-based Approach for Vegetable Image Classification



Vegetable image classification plays a crucial role in various domains such as agriculture, food industry, and dietary analysis. Accurate identification and classification of vegetables are essential for quality control, inventory management, and automated sorting systems. In recent years, the advent of deep learning techniques has revolutionized the field of computer vision, enabling more accurate and efficient image classification tasks.

The objective of this report is to explore and analyze the application of deep learning algorithms for vegetable image classification. By leveraging convolutional neural networks (CNNs), we aim to develop a robust and reliable system that can accurately classify different types of vegetables based on their visual attributes.

Deep learning algorithms have demonstrated remarkable success in various image recognition tasks, surpassing traditional machine learning approaches. The ability of CNNs to automatically learn hierarchical features from raw image data makes them particularly well-suited for complex classification problems. By training a CNN model on a large dataset of labeled vegetable images, we can harness its power to recognize patterns and extract discriminative features from the input data.

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Use case - 10:

GreenClassify: Deep Learning-based Approach for Vegetable Image Classification



Social Impact
From a social perspective, the "GreenClassify: Deep Learning-based Approach for Vegetable Image Classification" project has the potential to positively impact society by enhancing crop management, promoting sustainable agriculture, improving food security, and contributing to better public health and well-being. It empowers small-scale farmers and encourages the adoption of responsible agricultural practices, ultimately benefiting communities and regions.

Business Model/Impact
From a business standpoint, the project the "GreenClassify: Deep Learning-based Approach for Vegetable Image Classification" project creates various business opportunities in the agriculture and food sectors. It empowers organizations to offer innovative solutions, improve agricultural practices, and contribute to reduced food waste, ultimately benefiting both the agricultural industry and consumers.

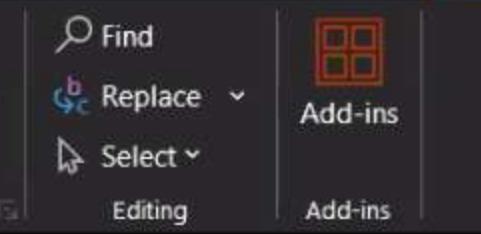
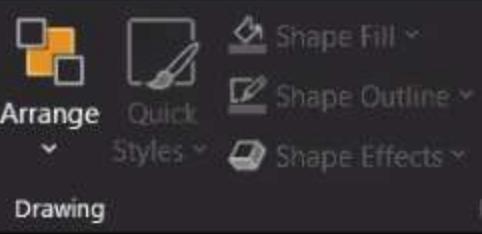
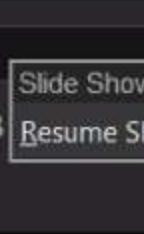
Recommended Technology Stack
Machine Learning, Deep learning , Python, Flask, etc.

References
<https://projectgurukul.org/food-classification-using-deep-learning/>

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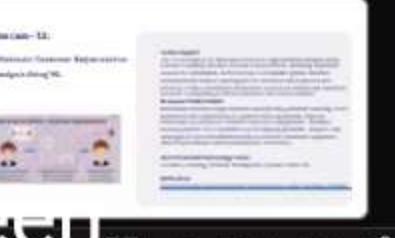
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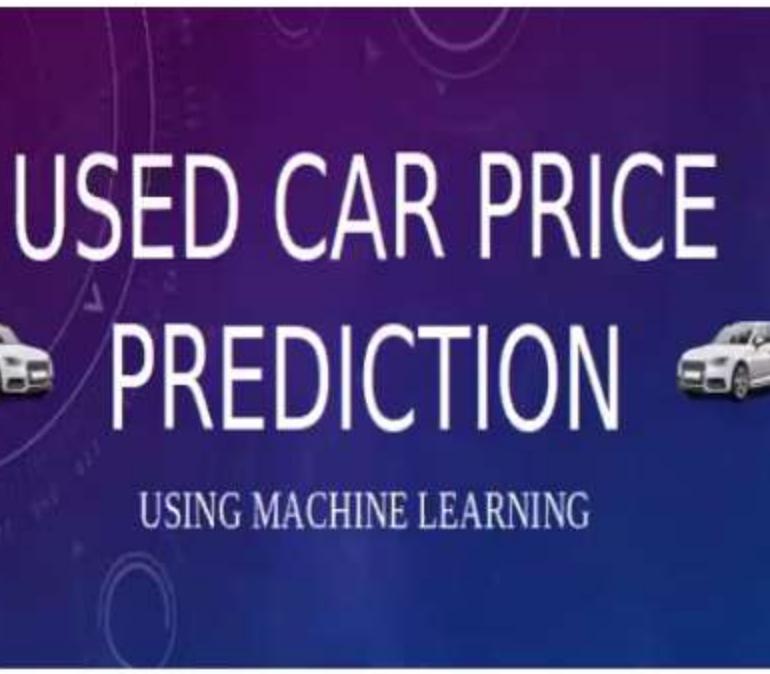
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Use case - 11: Car purchase Prediction Using ML

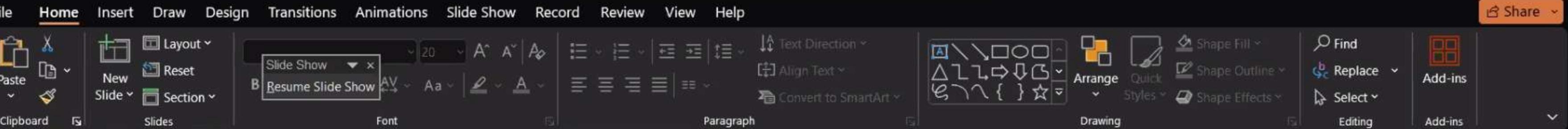


Click to add notes

Developed an innovative ML solution to predict car purchases based on customer data. Leveraged features such as age, income, and historical purchase patterns for accurate forecasts. Achieved high predictive accuracy using advanced algorithms and thorough data preprocessing. The model assists potential buyers by estimating their likelihood to make a purchase, guiding decision-making. Seamlessly integrated the model into a user-friendly interface, enabling easy predictions for users. This project revolutionizes the automotive industry by offering insights for tailored marketing strategies. Enhances customer experiences by facilitating informed choices and dealership targeting. A groundbreaking application of ML driving data-powered decisions.

Through meticulous training and feature engineering, the model attains a high accuracy rate, ensuring dependable predictions. Seamlessly integrated into a user-friendly interface, users input their demographics and receive precise purchase likelihoods. This innovation revolutionizes marketing strategies by enabling targeted customer engagement and resource optimization. By harnessing data insights, the project empowers automotive businesses to tailor their approaches, enhancing overall efficiency.

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Use case - 11:

Car purchase Prediction Using ML

The title slide has a dark purple background with a circular pattern. The text 'USED CAR PRICE PREDICTION' is written in large, white, sans-serif capital letters. Below it, 'USING MACHINE LEARNING' is written in a smaller, white, sans-serif font. There are small images of two cars on either side of the main text.

Click to add notes

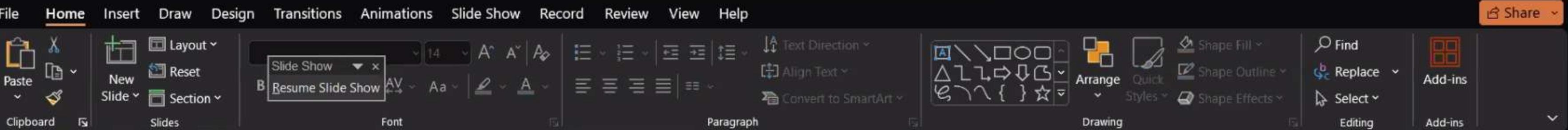
Social Impact
The social impact of car purchase prediction using machine learning includes empowering consumers to make informed decisions, reducing costs, promoting eco-friendly and safe driving, and contributing to economic growth and technological advancement in the automotive industry. These impacts collectively lead to a more efficient, sustainable, and safer transportation landscape.

Business Model/Impact
The use of machine learning for car purchase predictions has the potential to significantly impact the automotive industry and related sectors by optimizing sales, improving customer experiences, and enabling data-driven decision-making. It enhances the overall efficiency and profitability of businesses in the automotive market.

Recommended Technology Stack
Machine Learning, Artificial Intelligence, Python, Flask, etc.

References
<https://towardsdatascience.com/predicting-used-car-prices-with-machine-learning-techniques-8a9d8313952>

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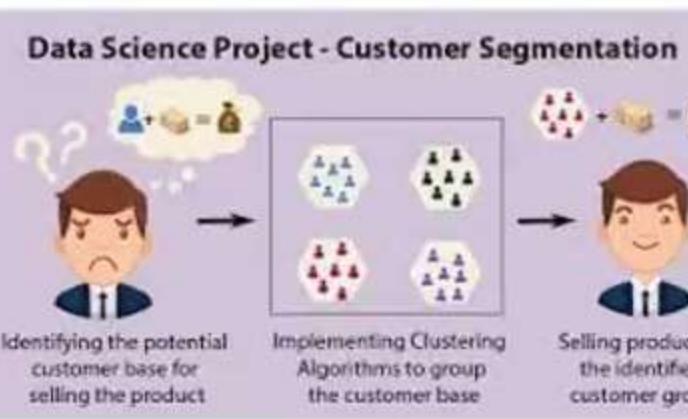
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Use case - 12: Wholesale Customer Segmentation Analysis Using MLEfficiency

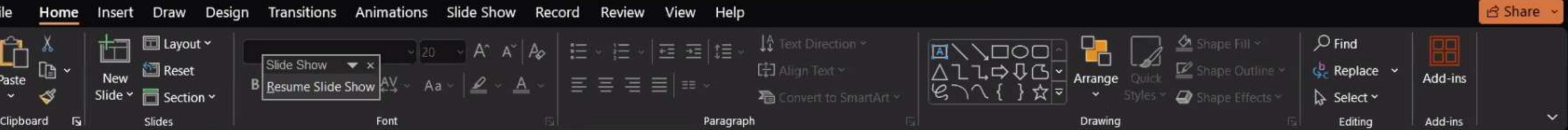


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This project aims to analyse the spending behaviour of wholesale customers and identify opportunities for growth. The data set consists of annual spending (in monetary units) on various product categories, including fresh, milk, grocery, frozen, detergents and paper, and delicatessen products. Additionally, the data includes information on the channel (hotel/restaurant/cafe or retail) and region (Lisbon, Oporto, or other) of the customer.

By identifying customer segments with distinct spending behaviours, the project aims to provide insights on how wholesale businesses can tailor their marketing strategies and product offerings to better serve each customer segment. The outcomes of this project can have several applications. Business can utilize the predictive model to identify customers with distinct spending behaviours.

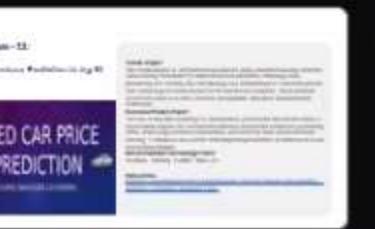
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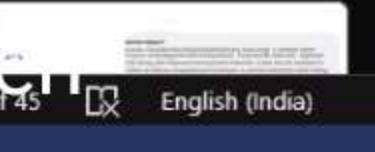
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Slide 28 of 45



English (India)

Accessibility: Investigate

Use case - 12:

Wholesale Customer Segmentation Analysis Using ML

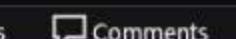
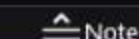
The diagram illustrates the 'Data Science Project - Customer Segmentation' process. It starts with a character thinking about identifying potential customer base for selling products. This leads to implementing clustering algorithms to group the customer base. Finally, the character sells products to the identified customer groups.

Social Impact:
The social impact on wholesale customer segmentation analysis using machine learning can have various social impacts, including improved customer experiences, better access to affordable goods, reduced environmental impact, and support for economic development and diversity. It also encourages businesses to be more ethical and customer-focused, contributing to a more inclusive and diverse market.

Business Model/Impact:
Wholesale customer segmentation analysis using machine learning offers businesses the opportunity to optimize their operations, improve marketing effectiveness, enhance customer engagement, and drive revenue growth. It's a valuable tool for tailoring products, services, and strategies to meet the diverse needs of different customer segments, ultimately leading to improved business outcomes..

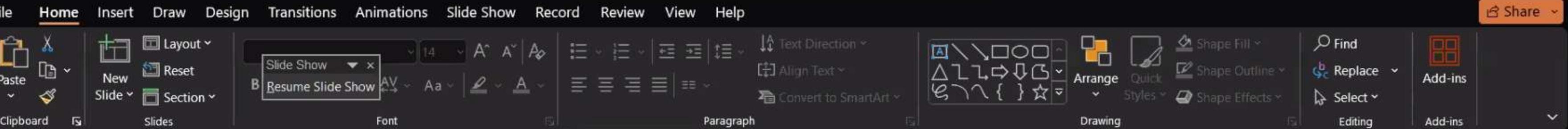
Recommended Technology Stack
Machine Learning, Artificial Intelligence, Python, Flask, etc.

References
<https://neptune.ai/blog/customer-segmentation-using-machine-learning>



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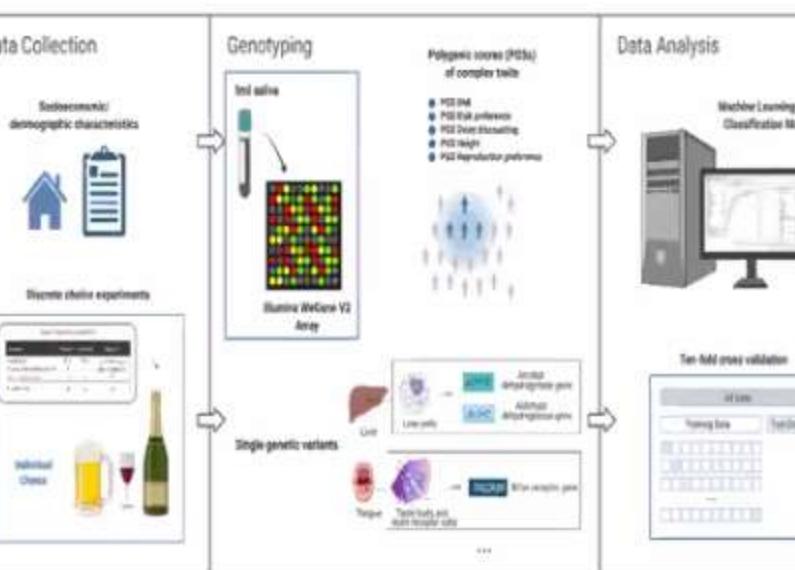


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Use case - 13: Genetic classification of an individual by using Machine Learning



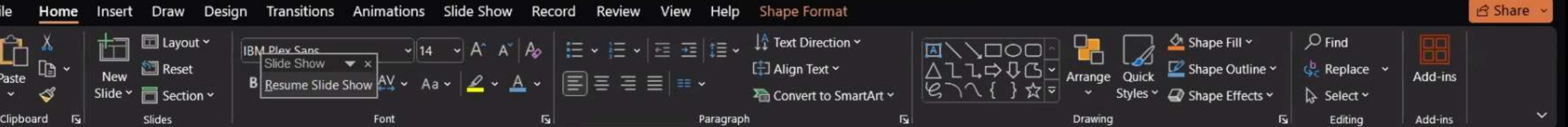
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ClinVar is a public resource containing annotations about human genetic variants. These variants are (usually manually) classified by clinical laboratories on a categorical spectrum ranging from benign, likely benign, uncertain significance, likely pathogenic, and pathogenic. Variants that have conflicting classifications (from laboratory to laboratory) can cause confusion when clinicians or researchers try to interpret whether the variant has an impact on the disease of a given patient.

Conflicting classifications are when two of any of the following three categories are present for one variant, two submissions of one category are not considered conflicting.

1. Likely Benign or Benign
2. VUS
3. Likely Pathogenic or Pathogenic

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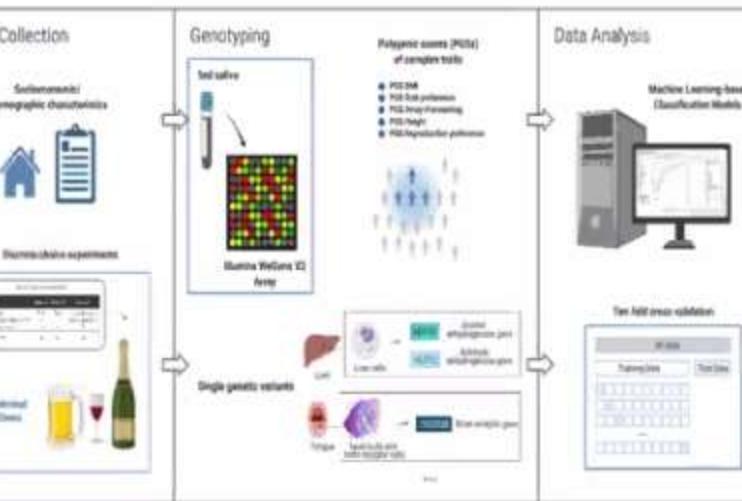
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Use case - 13:

Genetic classification of an individual by using Machine Learning



Click to add notes

Social Impact:

Genetic classification using machine learning has a range of positive social impacts, including personalized healthcare, early disease detection, improved well-being, and advancements in genetic research. It also has the potential to reduce healthcare disparities and contribute to disease prevention while raising ethical and privacy considerations.

Business Model/Impact

Genetic classification using machine learning has a wide range of business impacts, from personalized medicine and drug development to healthcare services, biotechnology research, and data analytics. It opens up various revenue streams and opportunities in healthcare, genetics, and related industries while requiring businesses to address ethical and regulatory considerations.

Recommended Technology Stack

Machine Learning, Artificial Intelligence, Python, Flask, etc.

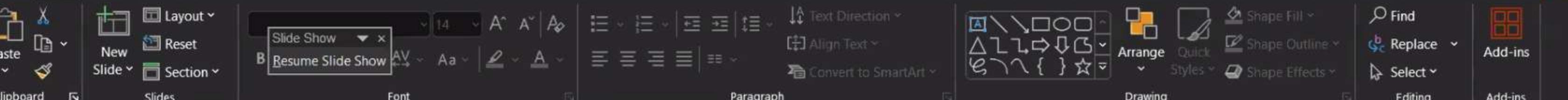
References

https://www.researchgate.net/publication/223736822_Genetic_Classification_of_Populations_Using_Supervised_Learning

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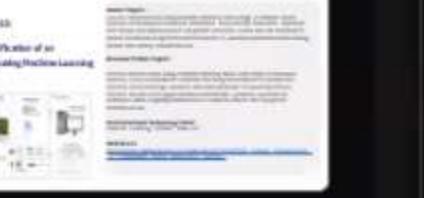
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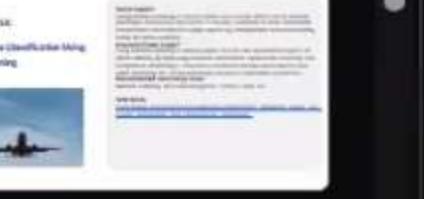
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Use case - 14:

Airline Review Classification Using Machine Learning



Click to add notes

In today's interconnected world, the airline industry serves as a critical catalyst for global travel and business. As air travel becomes increasingly accessible, the quality of service provided by airlines plays a pivotal role in shaping passenger experiences. This project focuses on the development of an airline review classification system using Classification models such as Decision Tree Classifier, Random Forest Classifier, XGBoost Classifier etc.,

The proliferation of social media platforms, travel websites, and online forums has given rise to a wealth of user-generated content, including airline reviews. Extracting actionable insights from this vast pool of unstructured

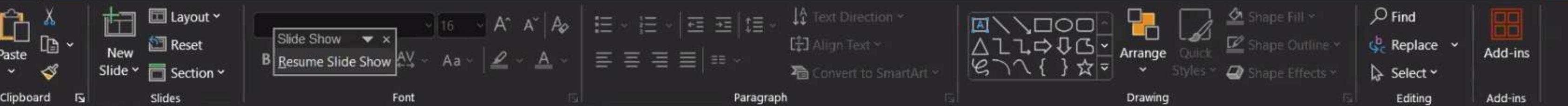
text data has the potential to provide airlines with valuable information for refining their services and elevating passenger satisfaction.

Throughout this report, we will delve into the methodology employed to preprocess the raw text data, the process of selecting pertinent features, the training and evaluation of the classification model, and the subsequent interpretation of the obtained results.

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Use case - 14:

Airline Review Classification Using Machine Learning



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Notes

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Social Impact:

Using machine learning to analyze airline reviews can lead to better services, passenger satisfaction, and safety. It can also contribute to more sustainable and inclusive travel practices while enhancing transparency and accountability within the airline industry.

Business Model/Impact

using machine learning to analyze airline reviews can significantly impact the airline industry by improving customer satisfaction, operational efficiency, and competitive positioning. It can lead to increased revenue and reduced costs while enhancing the overall passenger experience and airline reputation.

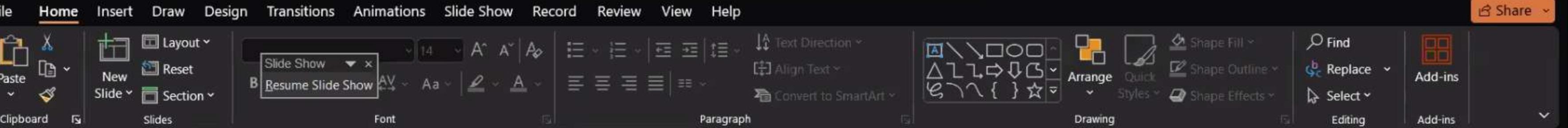
Recommended Technology Stack

Machine Learning, Artificial Intelligence, Python, Flask, etc.

References

[https://www.researchgate.net/publication/350552031 Predicting Airline Passenger Satisfaction with Classification Algorithms](https://www.researchgate.net/publication/350552031_Predicting_Airline_Pasenger_Satisfaction_with_Classification_Algorithms)

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Slide 33 of 45

English (India)

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Use case - 15: World Happiness Classification Report I



I'm so happy with this product.
100% recommended!



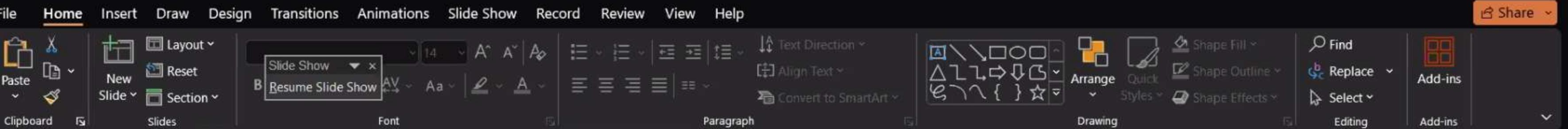
The product is ok.
Some things could be improved



This product is useless, don't buy.

"Happiness is a dream goal to be achieved by governments and individuals and it can be considered as a proper measure of social development progress. The purpose of this paper is to conduct a study on World happiness report dataset, to classify the most critical variables regarding the life happiness score. The strong evidence of the identified main features classified from the outcomes of applying the supervised machine learning approaches using the Neural Network training model and the OneR models in classifications and feature selection. The trained model used in predictions revealed the insights derived from applying the data analysis, where the study found out that the GDP per capita is the critical indicator of life happiness score as well as the health life expectancy is the second primary feature. Findings from study evaluated using different performance metrics such as accuracy and confusion matrix to prove the insights gained from the data.

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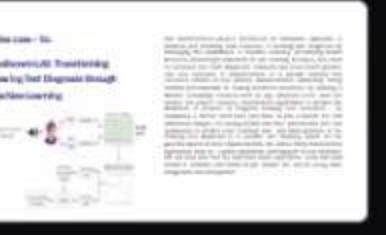
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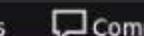
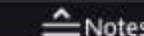
Slide 34 of 45



English (India)



Accessibility: Investigate



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Use case - 15:

World Happiness Classification Report

I'm so happy with this product. 100% recommended!

The product is ok. Some things could be improved

This product is useless, don't buy.

Social Impact: Happiness is a complex and multifaceted task, and it's crucial to approach this project with a multidisciplinary perspective, taking into account social, economic, and psychological factors. Additionally, be mindful of the potential limitations and biases in your data and model.

Business Model/Impact: Impact of businesses on happiness can be complex and multifaceted, so it's important to consider both quantitative and qualitative factors. Additionally, it's essential to approach this project with a balanced perspective and ensure that the analysis is conducted in an ethical and responsible manner.

Recommended Technology Stack
Machine Learning, Artificial Intelligence, Python, Flask, etc.

References
<https://www.i-csrs.org/Volumes/ijasca/2022.1.2.pdf>

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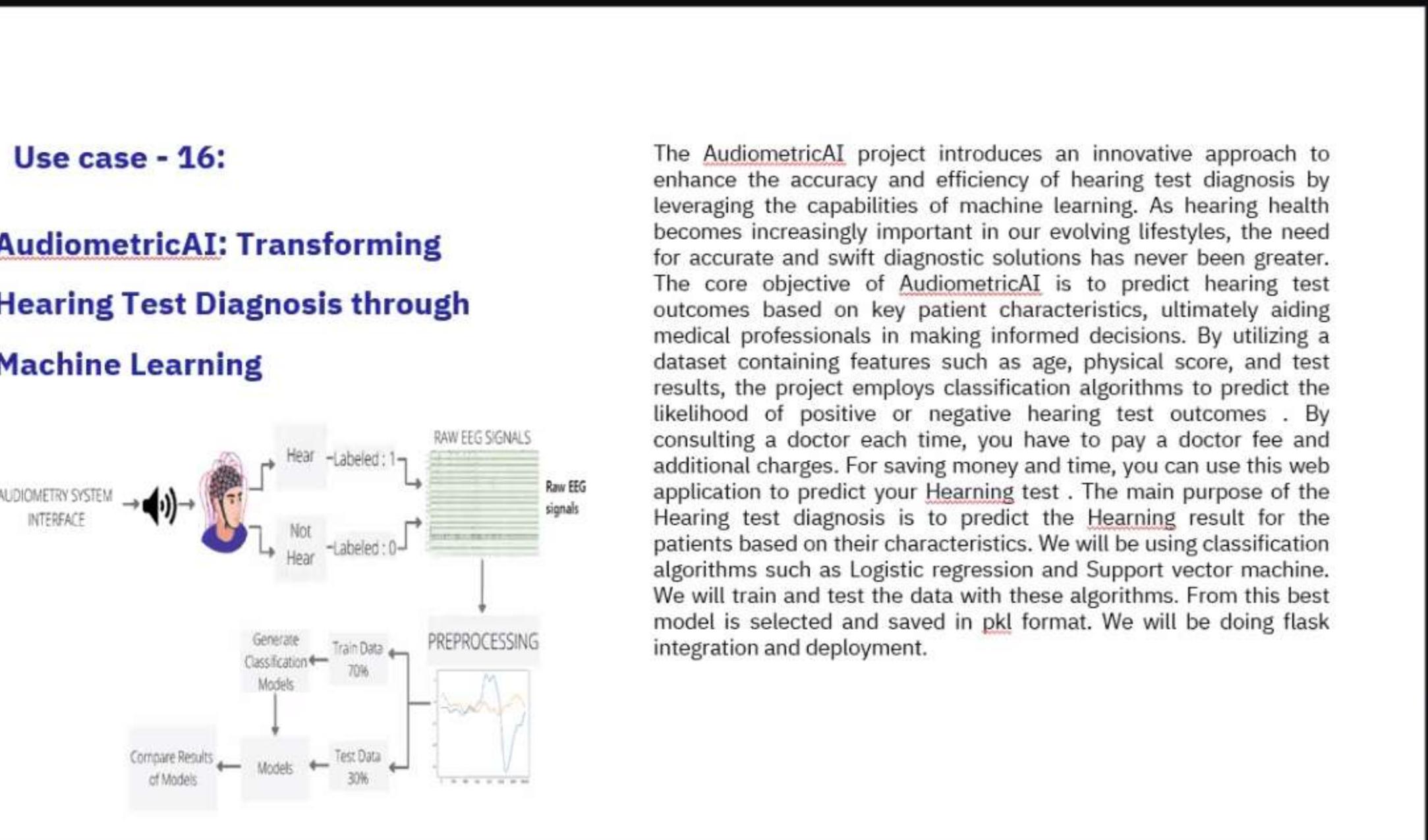
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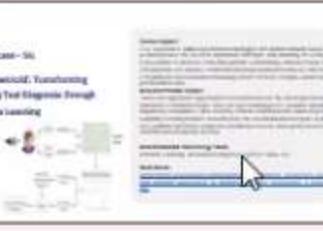
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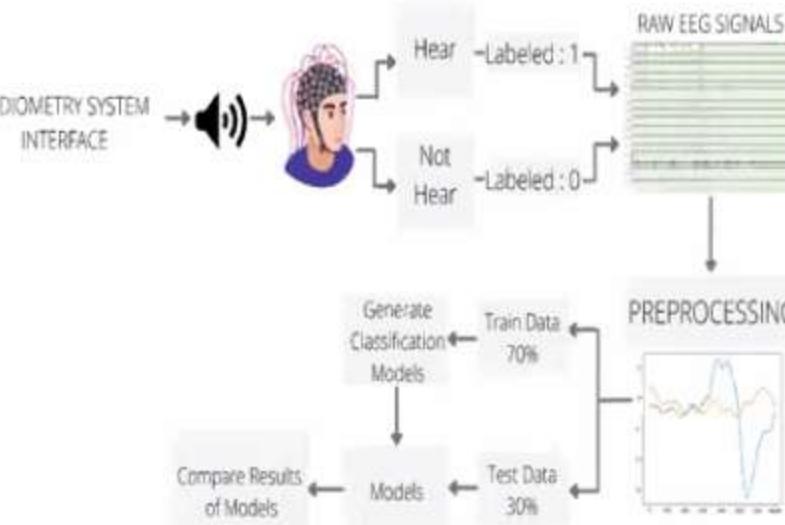
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Use case - 16:

AudiometricAI: Transforming Hearing Test Diagnosis through Machine Learning



Social Impact:

It is essential to address potential challenges and ethical considerations, such as data privacy, the need for regulatory oversight, and ensuring the technology is accessible to all socio-economic groups. Additionally, AudiometricAI should complement, not replace, traditional hearing healthcare services, with the role of healthcare professionals remaining crucial for more complex cases and personalized care.

Business Model/Impact

There are significant opportunities for businesses in the development and utilization of AudiometricAI, there are also challenges to consider, including regulatory compliance, data security, ethical considerations, and competition in a rapidly evolving market. Nevertheless, the overall business impact is positive, as it enables innovation, improves healthcare access, and opens new revenue streams across various sectors.

Recommended Technology Stack

Machine Learning, Artificial Intelligence, Python, Flask, etc.

References

[https://www.researchgate.net/publication/353384308 Automated and machine learning approaches in diagnostic hearing assessment a scoping review](https://www.researchgate.net/publication/353384308_Automated_and_machine_learning_approaches_in_diagnostic_hearing_assessment_a_scoping_review)

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English (India)

Accessibility: Investigate

Use case - 17:

STARTUP PROPHET:HARNESSING AI TO DIVINE THE FUTURE OF STARTUP SUCCESS



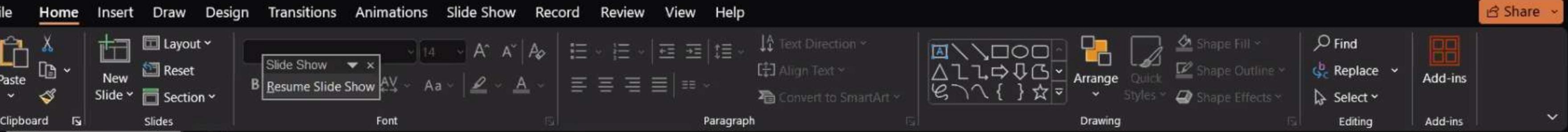
Harnessing the Potential of AI for Startups

Break away from the mundane and get the **most out of your employees** by supplementing their tedious tasks with **AI**.

The book cover features a purple background with a central illustration of a brain connected to a circuit board, symbolizing the integration of AI into startup operations.

- "Startup Prophet: Harnessing AI to Divine the Future of Startup Success" is an innovative and forward-thinking book that explores the intersection of artificial intelligence and entrepreneurship. Written by a seasoned expert in both AI and the startup ecosystem, this book offers a compelling glimpse into the future of startup ventures by leveraging the predictive power of AI technology.
- In this groundbreaking work, the author delves into the ways in which AI is revolutionizing the world of startups, offering entrepreneurs and investors unprecedented insights into the factors that can drive success or failure in the highly competitive startup landscape. Through a combination of real-world case studies, data analysis, and expert commentary, "Startup Prophet" demonstrates how AI can be harnessed to make more informed decisions, reduce risks, and increase the chances of achieving startup goals.

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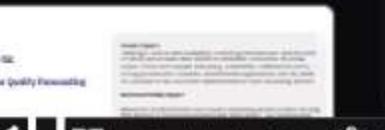
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Use case - 17:

STARTUP PROPHET:HARNESSING AI TO DIVINE THE FUTURE OF STARTUP SUCCESS

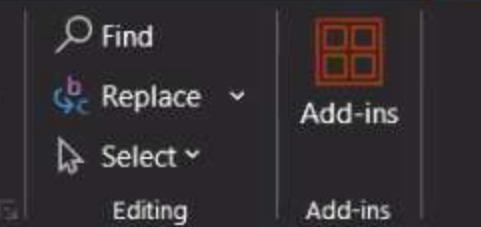


Social Impact:
However, it's important to consider potential downsides and ethical concerns as well. Overreliance on AI predictions may stifle creativity and innovation by promoting conformity to established success patterns. It may also inadvertently lead to underinvestment in startups that don't fit the AI's predictive model but still have innovative ideas. Data privacy and algorithm bias are other concerns that should be carefully addressed in such a system. Additionally, it's vital to strike a balance between the guidance AI provides and human judgment, as entrepreneurial endeavors often require more than just data-driven decision-making.

Business Model/Impact
It's important to note that the accuracy and reliability of such a platform would be a critical factor in determining its success and impact. If the predictions are consistently accurate, it could significantly influence the startup ecosystem and investment landscape. However, if the predictions prove to be unreliable, it could have the opposite effect, eroding trust in AI-driven startup assessments. Additionally, regulatory and ethical considerations will play a significant role in shaping the impact of such a business.

Recommended Technology Stack
Machine Learning, Artificial Intelligence, Python, Flask, etc.

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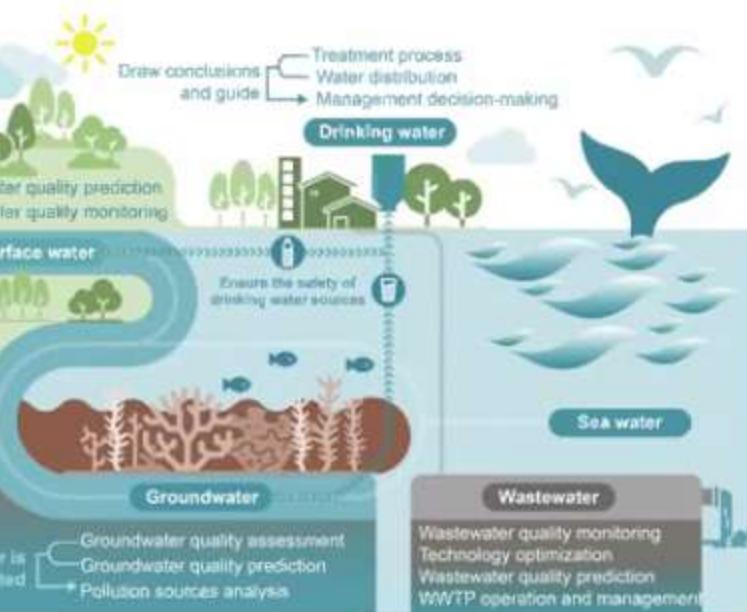


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Use case - 18:

River Water Quality Forecasting

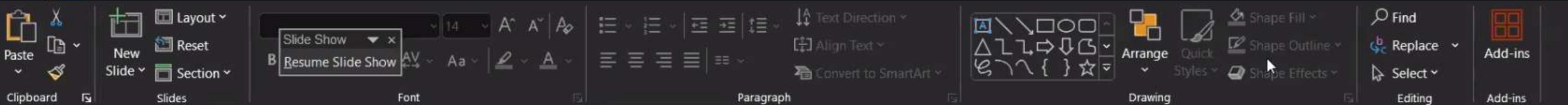


River water quality forecasting is the process of predicting the quality or condition of water in a river system at various points in the future. It involves using scientific models, data analysis, and monitoring to make informed predictions about key water quality parameters, such as chemical composition, temperature, turbidity, dissolved oxygen levels, and pollutant concentrations. This forecasting is essential for managing and safeguarding water resources, ensuring public health, protecting ecosystems, and supporting various water-related activities, such as agriculture, industry, and recreation.

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Use case -18:

River Water Quality Forecasting

The diagram illustrates the River Water Quality Forecasting process. It shows a flow from Surface water quality prediction and monitoring through Groundwater quality assessment and Wastewater quality monitoring, leading to treatment processes and management decision-making. A whale is shown in the sea water at the bottom right.

Social Impact:
challenges such as data availability, technology infrastructure, and the need for timely and accurate data should be addressed to maximize the social impact of river water quality forecasting. Additionally, collaborative efforts among governments, scientists, environmental organizations, and the public are essential for the successful implementation of such forecasting systems.

Business Model/Impact
Businesses involved in river water quality forecasting should consider the long-term benefits of preserving and improving water quality, as it can positively impact both environmental sustainability and the communities they operate in. Collaboration with government agencies and environmental organizations can also enhance business opportunities in this sector.

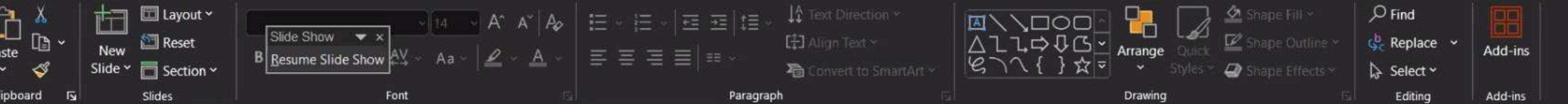
Recommended Technology Stack
Machine Learning, Python, Flask, etc.

References
<https://www.nature.com/articles/s41598-021-04062-5>

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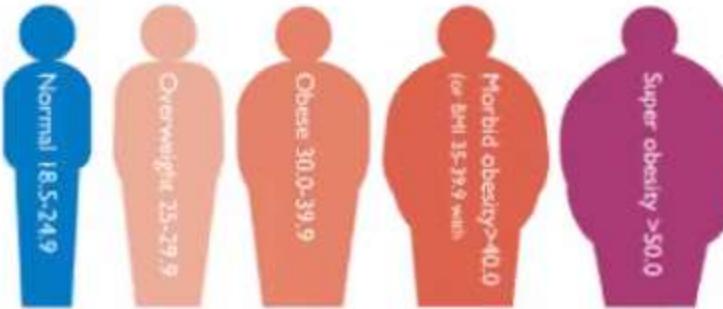


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Use case - 19:

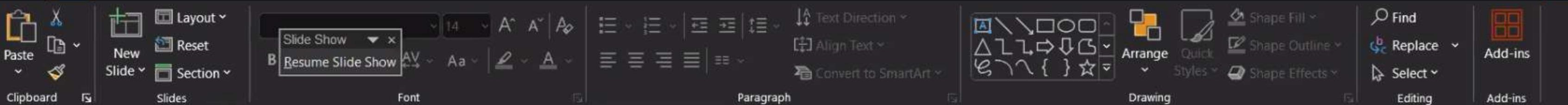
Obesity Classification

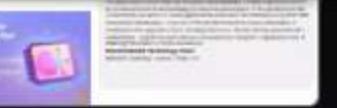


- Obesity is a pathological condition involving excess body fat. It is a chronic disorder with complex interaction between genetic and environmental factors. It is characterized by high cholesterol, fatty acid levels, insulin desensitization; high blood pressure; and excessive adipose mass accumulation. Currently more than 1 billion adults are overweight and at least 300 million of them are clinically obese. It is defined by body mass index and further evaluated by both percentage body fat and total body fat. Obesity is a risk to many secondary conditions like cardiovascular disorder, insulin resistance, retinopathy, neuropathy and cancer. Various factors modulating the development of obesity are age, sex, smoking, growth hormone level, skeletal muscle metabolism. Experimental models used to evaluate obesity are high fat diet, high cafeteria diet, hypothalamic lesions, gold thioglucose induced obesity, monosodium glutamate induced obesity. Non-human primates, spontaneously obese rats, obesity due to natural allele defects in mice, V-Genetic variants in the human Uncoupled Protein-1 gene and Viral induced obesity are also preferred. This project can have significant implications in various domains such as healthcare, sports, and fitness.

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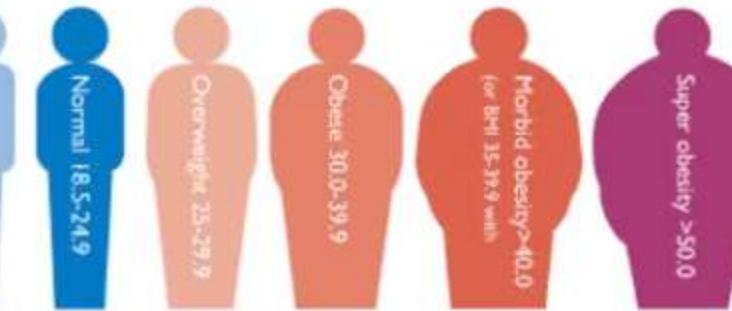
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Anil Ravula's screen

Use case -19: Obesity Classification



Social Impact:

the classification and management of obesity are not solely determined by medical criteria but are heavily influenced by social factors. Recognizing and addressing these social determinants of obesity is essential for developing effective prevention and treatment strategies, reducing disparities, and promoting healthier communities. Public health efforts and healthcare systems are increasingly taking into account the social dimensions of obesity to create more comprehensive and equitable approaches to this complex health issue.

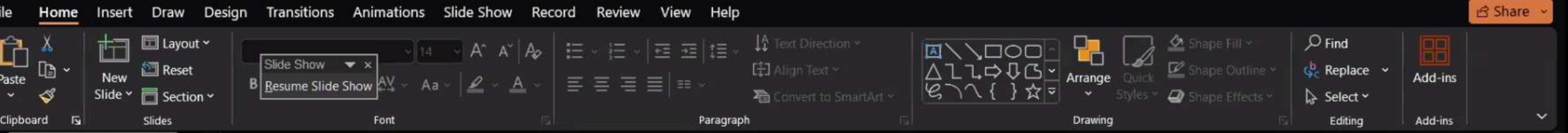
Business Model/Impact

The influence of business interests on obesity classification can sometimes create conflicts of interest, as profit motives may not always align with public health goals. It is important for policymakers, public health professionals, and healthcare providers to be aware of these influences and work towards evidence-based, impartial approaches to obesity prevention and treatment that prioritize the health and well-being of individuals and communities. Public-private partnerships that promote healthier food options and lifestyle choices while minimizing business practices that contribute to obesity are important for addressing this global health issue effectively.

Recommended Technology Stack

Machine Learning, Artificial Intelligence, Python, Flask, etc.

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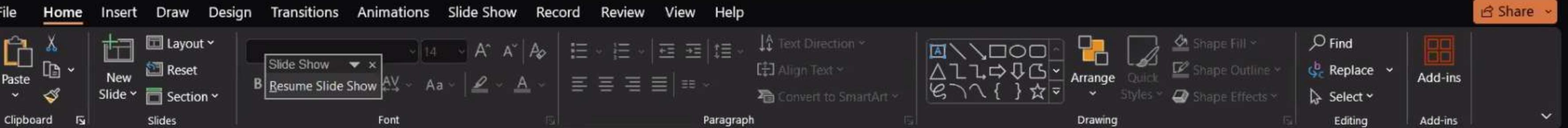
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Use case - 20: Food Delivery Estimation using Machine Learning

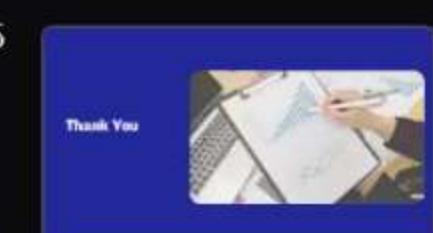
A large illustration of a delivery person wearing a purple helmet and uniform, riding a purple scooter. The word 'DELIVERY' is written in large, bold, purple letters above the person. A pink speech bubble is positioned next to the scooter.

In the fast-paced world of modern living, the demand for convenience is at an all-time high. Nowhere is this more evident than in the realm of food delivery. Whether it's a busy professional craving a gourmet meal after a long day at the office or a family looking to enjoy a cozy dinner at home, food delivery services have become an integral part of our daily lives. However, one of the key challenges in ensuring a satisfying food delivery experience lies in accurately estimating the delivery time. Food delivery estimation using machine learning is a cutting-edge approach to tackle this challenge head-on. By leveraging vast amounts of data, advanced algorithms, and predictive models, we can provide customers with accurate and reliable delivery time estimates. This not only enhances customer satisfaction but also streamlines operations for delivery platforms and restaurants. From data collection and preprocessing to the intricacies of predictive modeling and real-time updates, we will uncover how machine learning is revolutionizing the way we perceive, interact with, and experience food delivery services.

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Use case -20:

Food Delivery Estimation using Machine Learning



Social Impact:

It's important to note that while there are many positive social impacts, challenges related to the gig economy, labor conditions for delivery drivers, and data privacy need to be addressed to ensure that food delivery estimation systems benefit both customers and workers. Responsible and ethical practices should be a priority in the development and operation of these systems.

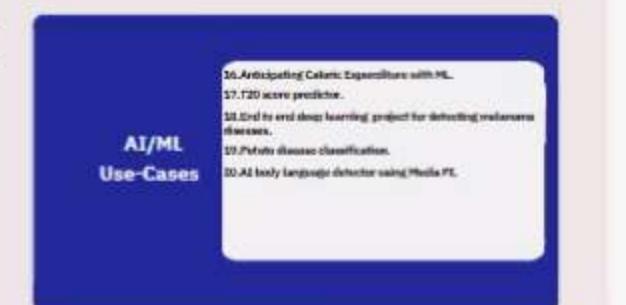
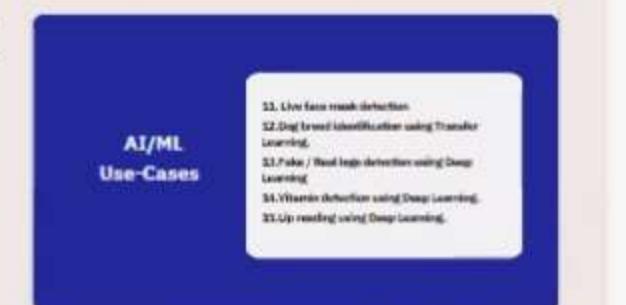
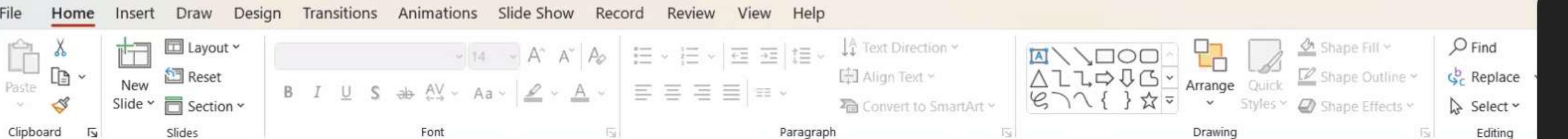
Business Model/Impact

While the business impact is generally positive, food delivery companies should be mindful of ethical considerations, including data privacy and the treatment of delivery drivers and couriers, to ensure the responsible and sustainable growth of their operations.

Recommended Technology Stack

Machine Learning, Artificial Intelligence, Python, Flask, etc.

REC



- Traffic problem is one of the major problems now a days. In the increase in no of vehicles and non -usage of public transport leading to traffic related issues, Making a eye on count of traffic at each level enables the government to take the further decisions such as building new roads, increasing infrastructure ,developing multi-channel connectivity .
- To address such problems to tracking the vehicle count in each and every place AI-ML has given a solution to such kind of traffic related issues, which are able to measure the volume of traffic, identify the violations of traffic rules etc. ML models could give early alerts of severe traffic to help prevent issues related to traffic problems.
- Hence, there is needs to develop ML algorithms capable in predicting Traffic volume with acceptable level of precision and in reducing the error in the dataset of the projected Traffic volume from model with the expected observable Traffic volume.

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USE CASE 1:

SOCIAL IMPACT:

1. Reduced Congestion: Accurate traffic volume estimation can help in planning and optimizing transportation systems, which can lead to reduced traffic congestion. This, in turn, results in less time wasted in traffic jams and lower levels of stress for commuters.

2. Improved Air Quality: Reduced congestion means fewer idling vehicles, leading to lower emissions and improved air quality. This can have a direct impact on public health by reducing respiratory issues and other health problems associated with air pollution.

BUSINESS IMPACT:

1. Transportation and Logistics: Companies in the transportation and logistics sector can use accurate traffic volume data for route optimization, reducing fuel costs, and ensuring timely deliveries. This leads to cost savings and improved customer satisfaction.

2. Real Estate and Retail: Businesses that rely on location-based data, such as real estate and retail, can benefit from understanding traffic patterns. They can make informed decisions about where to establish new locations and when to offer promotions based on expected foot traffic.

Recommended Technology Stack
Deep Learning, Artificial Intelligence, Python, Flask, etc.

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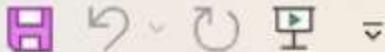
5. **Recommended Technology Stack:**
Deep Learning, Artificial Intelligence, Python, Flask, etc.

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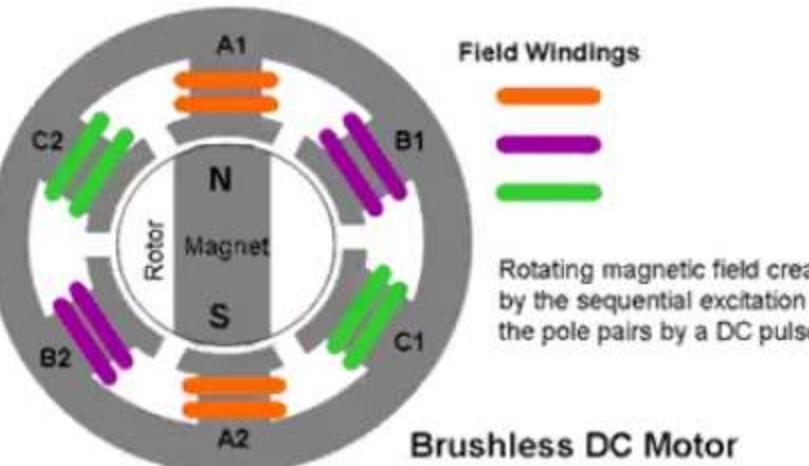
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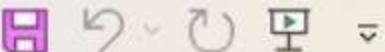


- The permanent-magnet synchronous machine (PMSM) drive is one of the best choices for a full range of motion control applications.
- For example, the PMSM is widely used in robotics, machine tools, actuators, and it is being considered in high-power applications such as industrial drives and vehicular propulsion.
- It is also used for residential/commercial applications. The PMSM is known for having low torque ripple, superior dynamic performance, high efficiency, and high power density. The task is to design a model with appropriate feature engineering that estimates the target temperature of a rotor.



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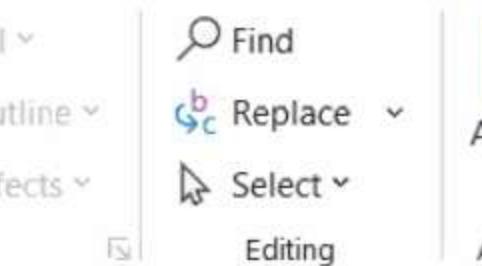
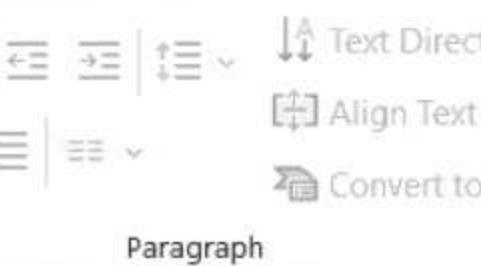
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5 USE CASE 1:
Smart Traffic: AI-based Traffic Volume Estimation System Using Convolutional Neural Networks

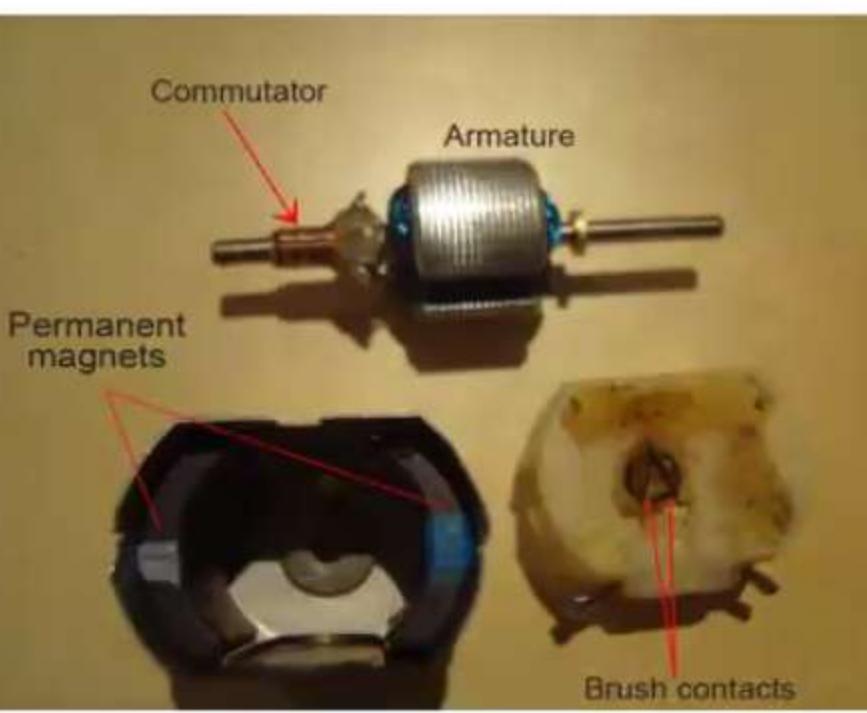
6 USE CASE 2:
Smart Traffic: AI-based Traffic Volume Estimation System Using Convolutional Neural Networks

7 USE CASE 3:
Predictive Maintenance System for Electric Motors Using Deep Learning

8 USE CASE 4:
Energy Efficiency and Sustainability: Optimizing Permanent Magnet Synchronous Motors

Sal Kushal's Slides

USE CASE 2:



SOCIAL IMPACT:

Energy Efficiency and Sustainability: Predicting permanent magnet resistance accurately can contribute to increased energy efficiency in electric motors. This can lead to reduced energy consumption and a lower carbon footprint, thus supporting environmental sustainability.

Safety and Reliability: Electric motors are used in various safety-critical applications. Predictive maintenance can help ensure the reliability and safety of systems, such as medical devices or transportation.

I

BUSINESS IMPACT:

Cost Reduction:

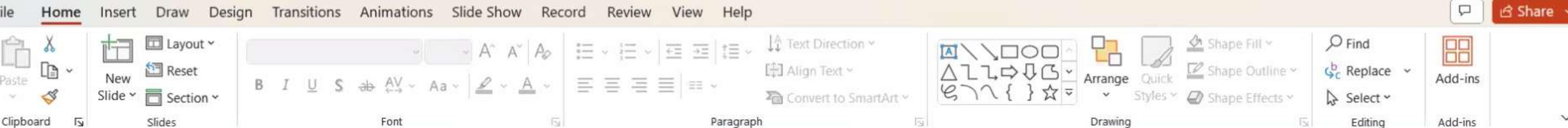
Predictive maintenance can reduce the costs associated with motor repairs and replacements, as maintenance can be planned and executed proactively.

Improved Product Quality: Businesses can deliver products with higher reliability and durability, leading to increased customer satisfaction and brand reputation.

Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.

REC



8

USE CASE 3:

Machine Learning Approach For Employee Performance Prediction

Employee performance is going to improve and predict the performance of employees in an organization on the basis of various factors, including, but not limited to, individual and domain specific characteristics, nature and level of schooling, socioeconomic status and different psychological factors.

Here we have used Supervised learning techniques namely Support Vector Machines, Random Forest, Naive Bayes, Neural Networks and Logistic Regression which considers these factors and provides insights into the performance and commitment of employees.

employees are classified into 3 output classes indicating the level of their performance from low to high.

In this research paper, 10-fold validation technique is used to ensure the correctness of the prediction by the above-mentioned techniques. Support Vector Machines prove to be the most efficient in terms of accuracy. The result is accentuated by the high validation score obtained by the same.

9

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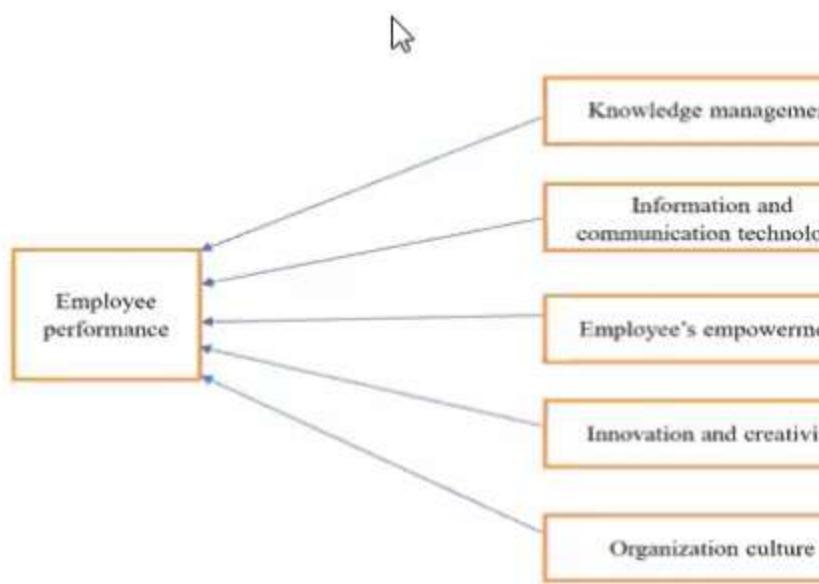
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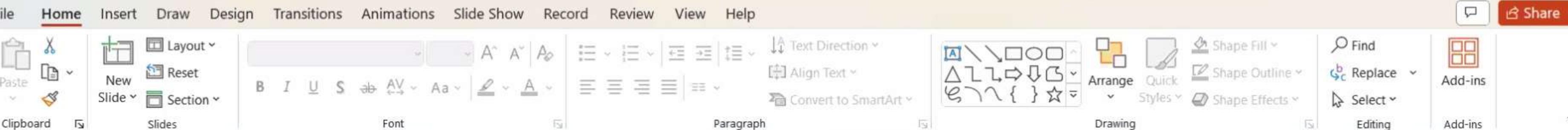
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USE CASE 3:

Employee Performance Prediction

This slide discusses the use of machine learning algorithms for predicting employee performance. It highlights the importance of accurate predictions for career development, skill enhancement, and business impact.

Career Development: Accurate predictions help organizations identify areas for improvement and provide targeted training and development opportunities.

Skill Enhancement: Employees are more likely to focus on skill development and self-improvement when they have a clear understanding of their performance strengths and weaknesses.

Business Impact: Enhanced productivity and innovation contribute to improved business performance.

Workforce Planning: Data from performance prediction can inform workforce planning and resource allocation, ensuring that the right talent is in place for business growth.

9

USE CASE 3:

Machine Learning Approach For Employee Performance Prediction

This slide provides a detailed overview of the machine learning approach for employee performance prediction. It covers the data collection, feature extraction, model selection, and evaluation process.

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USE CASE 3:

Employee Performance Prediction Using Machine Learning

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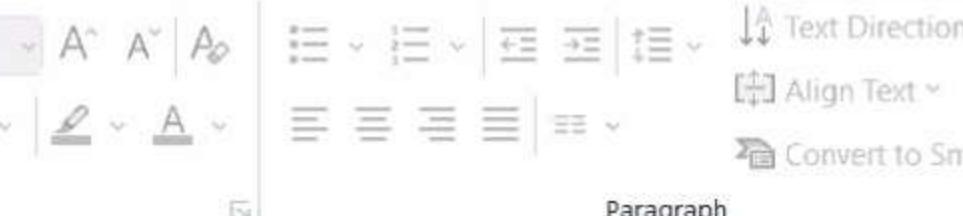
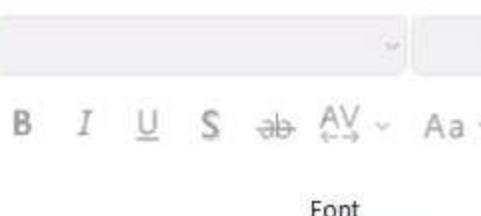
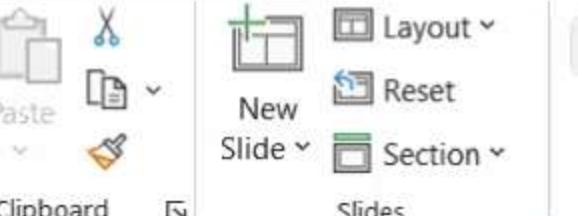
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8

USE CASE 4:

ESTIMATING THE STOCK KEEPING UNITS USING MACHINE LEARNING

This slide contains a diagram illustrating the machine learning pipeline for estimating Stock Keeping Units (SKUs). The process starts with 'Taboo Finance Data' and 'Financial News Headlines Articles'. These are preprocessed and normalized. The 'Stock Data + Trend' is then combined with the 'Final Dataset' and undergoes 'Sentiment Analysis'. The resulting 'Train Dataset' is used for 'LSTM model building and training', which generates a 'Rebuilding Model'. This model is tested on the 'Test Dataset' to produce 'Recently Predicted Data Value'. Finally, the results are evaluated using the XAI tool LIME, and an explanation is provided using a plot.

9

USE CASE 4:

Machine Learning Approach For Economic Performance Prediction

This slide discusses the use of machine learning for economic performance prediction. It highlights that such predictions are crucial for strategic planning and operational efficiency. The process involves collecting data from various sources like financial news and headlines, performing sentiment analysis, and using machine learning models to predict economic trends.

10

USE CASE 4:

Demand Forecasting

This slide provides an overview of demand forecasting. It states that demand forecasting is a critical component of business strategy, helping companies make informed decisions about production, inventory management, and marketing. The process involves collecting historical sales data, identifying trends, and using statistical or machine learning models to predict future demand.

11

USE CASE 4:

DATA DRIVEN DEMAND FORECASTING SYSTEM FOR RETAILERS

This slide details a data-driven demand forecasting system for retailers. It emphasizes the importance of accurate demand forecasting for effective supply chain management. The system likely involves collecting sales data, applying time series analysis, and using machine learning to predict future demand based on historical patterns and external factors.

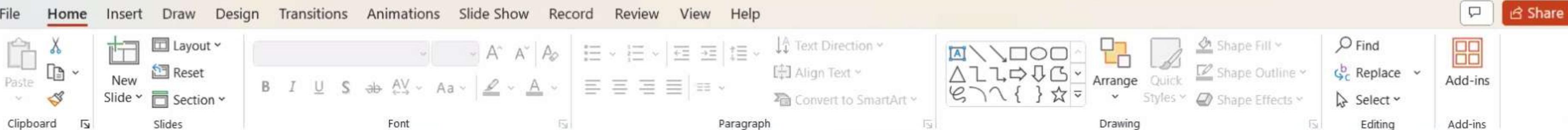
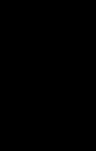
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USE CASE 4:

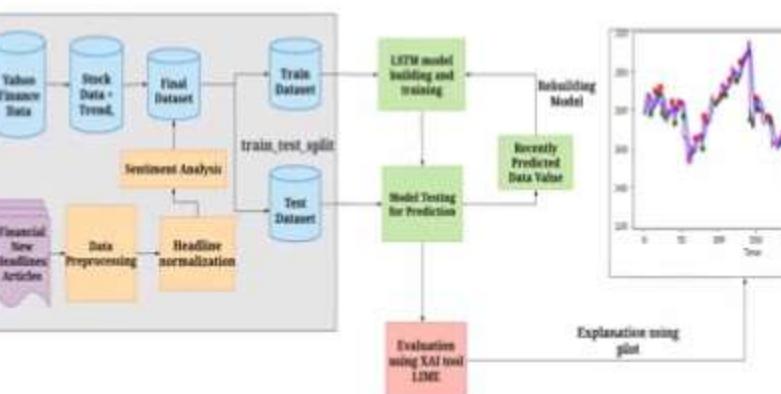
DATA DRIVEN DEMAND FORECASTING SYSTEM FOR RETAILERS

This slide reiterates the importance of demand forecasting for retail businesses. It highlights how accurate forecasts can lead to better inventory management, reduced costs, and improved customer satisfaction. The system described here likely follows a similar methodology to the one in slide 11.

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USE CASE 4:



SOCIAL IMPACT:

Accurate SKU estimation can lead to a broader variety of products available to consumers, providing them with more choices and catering to diverse needs and preferences.

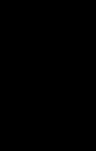
Efficient SKU management can lead to cost savings, potentially resulting in lower prices for consumers, making products more affordable.

BUSINESS IMPACT:

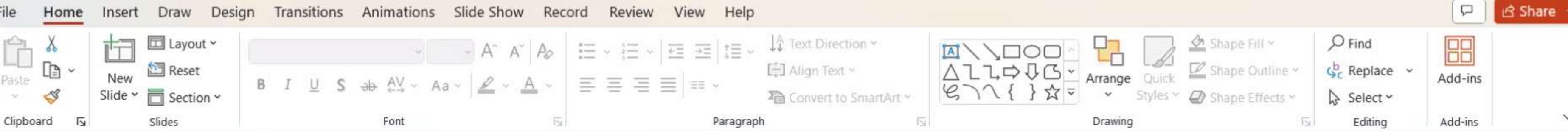
Accurate SKU estimation streamlines inventory management, allowing businesses to maintain optimal stock levels, reducing carrying costs and maximizing profitability. Businesses can leverage SKU estimation to identify new products and markets, potentially expanding their reach and customer base. Efficient inventory management reduces operational expenses, lowers storage and carrying costs, and leads to overall cost savings for businesses.

Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.



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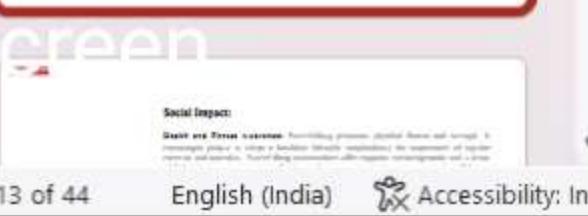
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Slide 13 of 44

English (India)

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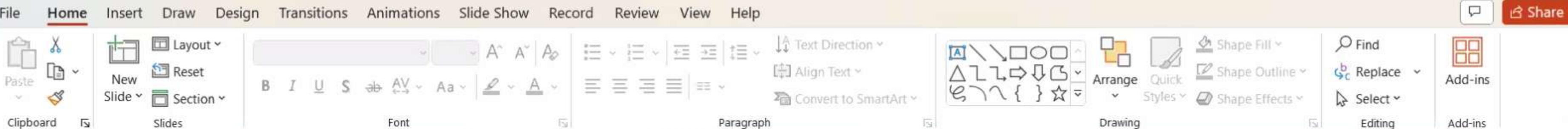
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USE CASE 5:

PREDICTING THE UNPREDICTABLE: A LOOK INTO THE WORLD OF POWER LIFTING.

In recent years, along with the development of economy and society, sports have more people interested in it. Sports help people to increase resistance, reduce work stress and enhance solidarity among people, etc. According to the World Health Organization, each year about 2 million people die from lack of exercise. Lack of exercise will reduce the body's immunity and make adolescents develop abnormally. Powerlifting is a popular sport. In competition, the impact on powerlifters' performance is mainly due to age, weight, fitness and psychology. Therefore, the training methods of coaches for powerlifters are extremely important, and studying the factors that influence athletes' performance is an inseparable task in training process. based on the data powerlifting data in the international competitions; they calculated the score of powerlifters at their peak performance, thereby giving the development trend of athletes, helping experts to evaluate more correctly about the athletes' abilities before playing. To address these, regression algorithms such as Linear Regression, Decision tree, Random forest, and Xg Boost will be used. We will train and test the data with these algorithms. From this the best model is selected and saved in pkl format. We will also be deploying our model locally using Flask.

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USE CASE 5:

Social Impact:

Health and Fitness Awareness: Powerlifting promotes physical fitness and strength. It encourages people to adopt a healthier lifestyle, emphasizing the importance of regular exercise and nutrition. Powerlifting communities offer support, encouragement, and a sense of belonging to participants, which can have a positive impact on mental well-being. Powerlifting provides an engaging and constructive activity for youth, potentially diverting them from negative influences and behaviours.

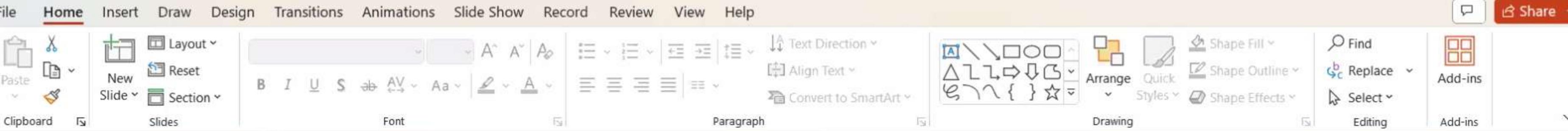


Business Impact:

Equipment Sales: The powerlifting industry benefits from the sale of specialized equipment, including weightlifting belts, shoes, and power racks, leading to a thriving market. Hosting powerlifting events and competitions can generate revenue from participant fees, ticket sales, and merchandise sales.

Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.

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USE CASE 6: IDENTIFICATION OF METHODOLOGY USED IN REAL ESTATE PROPERTY VALUATION



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Real estate prices are observed when properties change hands. The high costs and large average volume of a typical transaction (as compared to equity markets for example), lead to infrequent observations for the same asset. In between transactions, real estate professionals and investors need to rely on valuations — the most likely price to be obtained in the market, had the property been put up for sale. It's a hypothetical value, not the actual registered price. The AI wave brings unique business and ethical challenges, challenges to which real estate will not remain immune. More importantly, it indicates the increased role played by high purity timely data.. Future business models should therefore design new products and services not by obfuscating the value of this input to avoid compensating users for their data contribution, but by formally recognizing its worth and organizing the proper market needed to transact it.

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Shape Effects Select Add-ins

14 USE CASE 6 Social Impact: Business Impact: Equipment Use: The possibility exists, whether due to cost of equipment, equipment not being compatible with other tools, resulting in a lengthy process, or equipment being incompatible with other tools. This can lead to increased costs and potential delays. Software Training: Since training is critical for effective use of software, it is important to ensure that users receive adequate training.

15 USE CASE 6 INTEGRATION OF METHODOLOGY USE IN REAL ESTATE PROPERTY VALUATION Social Impact: Business Impact: Real estate property valuation is a complex task. The high value of real estate makes it a significant investment, so it is important to have a reliable valuation method. Real estate professionals use valuation methods to determine the value of real estate. The most widely used valuation method is the capitalization method. It involves calculating the present value of future cash flows generated by the property. This requires deep knowledge of financial mathematics, as well as experience in real estate valuation. Real estate valuation is also subject to various challenges, such as market volatility, interest rates, and economic conditions. These challenges can affect the accuracy of the valuation results.

16 USE CASE 6 Social Impact: Business Impact: Transparency and Trust: Well-established valuation methodologies can enhance transparency in real estate transactions, fostering trust among buyers, sellers, and other stakeholders. Accurate property valuation is vital for urban planning and development. It helps determine land use, infrastructure development, and zoning regulations.

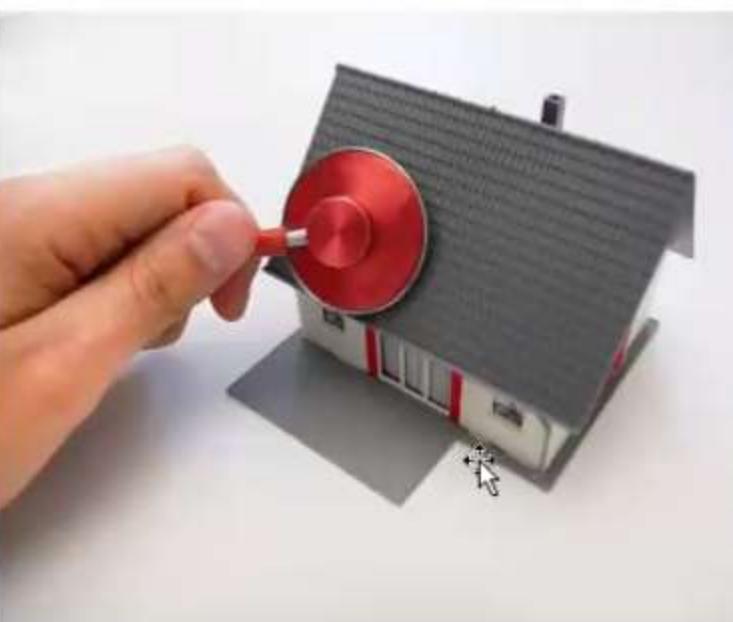
17 USE CASE 7 ONLINE PAYMENT FRAUD DETECTION Social Impact: Business Impact: Online fraud detection is a critical component of e-commerce. It helps prevent fraudsters from stealing money from online merchants. Fraud detection systems use machine learning algorithms to identify patterns of fraudulent activity. These patterns can be used to detect and prevent fraud in real-time. Fraud detection is also used to detect and prevent identity theft. It is a complex task that requires a deep understanding of machine learning and data analysis.

18 USE CASE 7 Social Impact: Business Impact: Online payment fraud detection is a critical component of e-commerce. It helps prevent fraudsters from stealing money from online merchants. Fraud detection systems use machine learning algorithms to identify patterns of fraudulent activity. These patterns can be used to detect and prevent fraud in real-time. Fraud detection is also used to detect and prevent identity theft. It is a complex task that requires a deep understanding of machine learning and data analysis.

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Slide 16 of 44 English (India) Accessibility: Investigate Notes

Sal Kushal's screen



Social Impact:

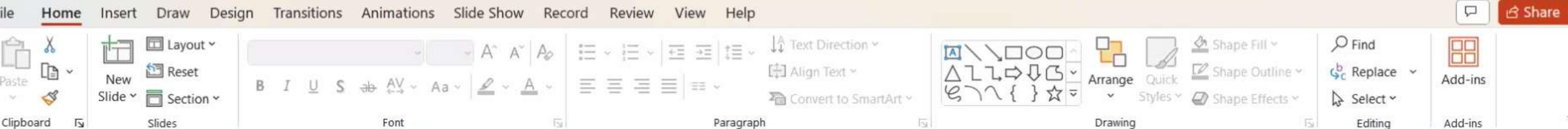
Transparency and Trust: well-established valuation methodologies can enhance transparency in real estate transactions, fostering trust among buyers, sellers, and other stakeholders. Accurate property valuation is vital for urban planning and development. It helps determine land use, infrastructure development, and zoning regulations.

BUSINESS IMPACT:

Accurate property valuation is vital for urban planning and development. It helps determine land use, infrastructure development, and zoning regulations. Real estate professionals and investors use valuation methodologies to assess the risks associated with property investments, helping them make prudent decisions.

Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.

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Sal Kushal's screen

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English (India)

Accessibility: Investigate

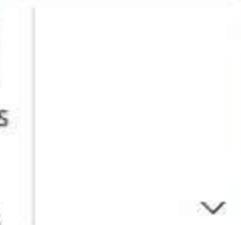
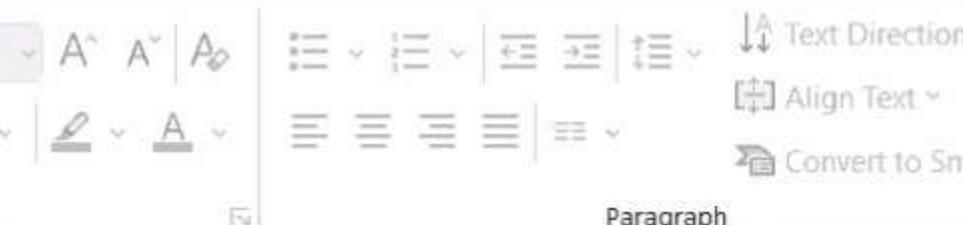
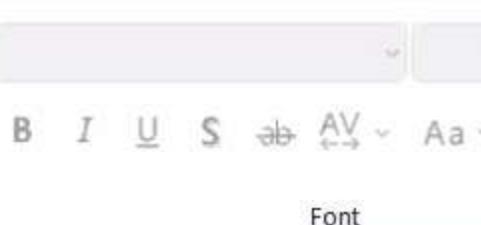
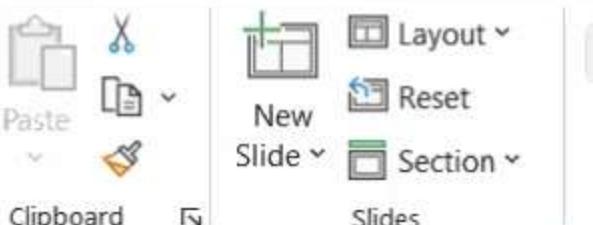
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USE CASE 7: ONLINE PAYMENT FRAUD DETECTION

The growth in internet and e-commerce appears to involve the use of online credit/debit card transactions. The increase in the use of credit / debit cards is causing an increase in fraud. The frauds can be detected through various approaches, yet they lag in their accuracy and its own specific drawbacks. If there are any changes in the conduct of the transaction, the frauds are predicted and taken for further process. Due to large of data credit / debit card fraud detection problem is rectified by the proposed method. We will be using classification algorithms such as Decision tree, Random forest, SVM, and Extra tree classifier, XGBoost Classifier. We will train and test the data with these algorithms. From this the best model is selected and saved in pkl format. We will be doing flask integration and IBM deployment.

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USE CASE 7:



Social Impact:

Enhanced Security : Online payment fraud detection systems help protect individuals and businesses from unauthorized transactions, identity theft, and financial loss, ultimately enhancing the security and trust in online financial transactions.

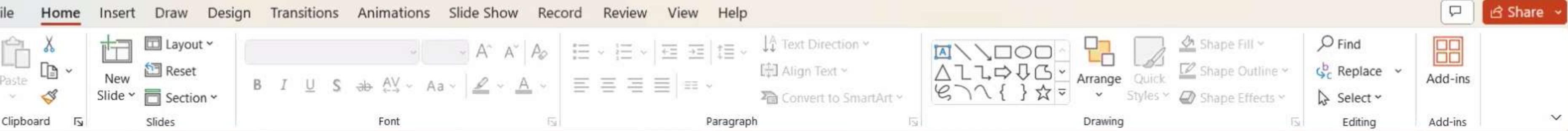
Effective fraud detection systems can lead to better data privacy practices, as they are often integrated with identity verification and authentication methods that protect sensitive personal information.

Business Impact:

Cost Savings : Implementing fraud detection systems helps businesses save money by preventing financial losses and reducing the need for costly chargebacks and fraud investigations.
Reputation Protection: Effective fraud detection safeguards a company's reputation and trustworthiness in the eyes of customers, which can be critical for brand equity and customer loyalty.

Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.

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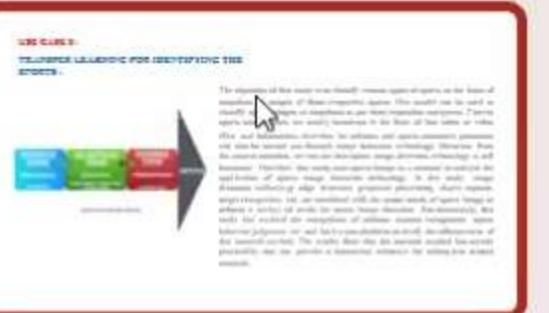
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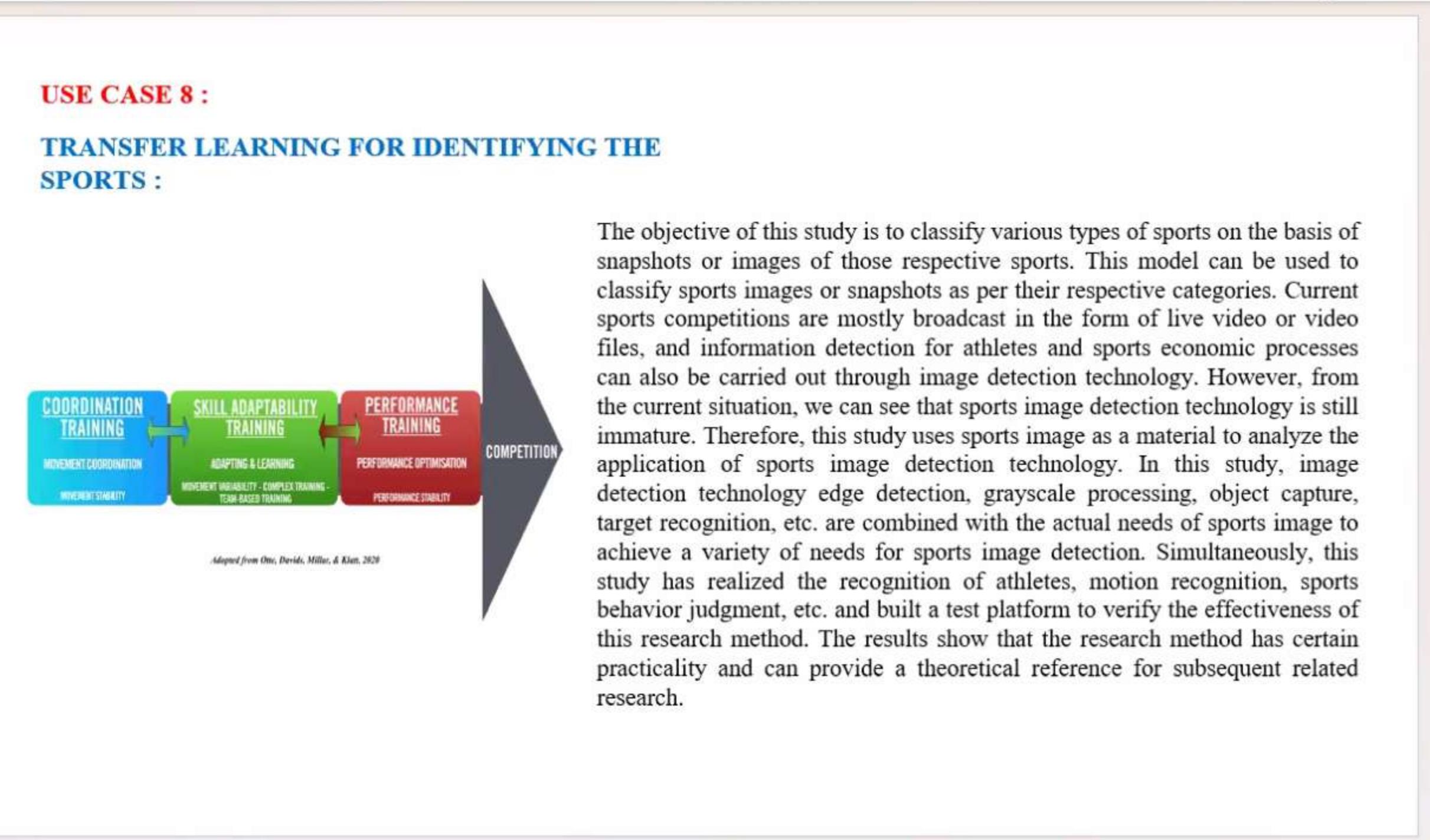
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Slide 19 of 44

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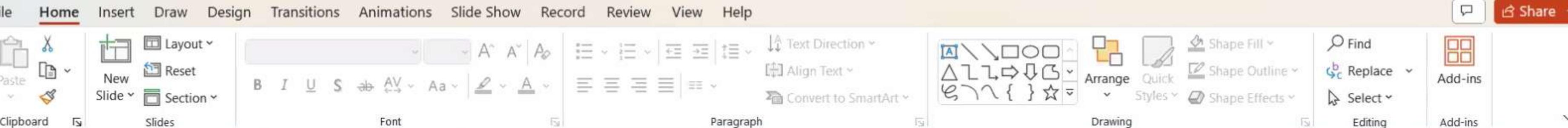
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The objective of this study is to classify various types of sports on the basis of snapshots or images of those respective sports. This model can be used to classify sports images or snapshots as per their respective categories. Current sports competitions are mostly broadcast in the form of live video or video files, and information detection for athletes and sports economic processes can also be carried out through image detection technology. However, from the current situation, we can see that sports image detection technology is still immature. Therefore, this study uses sports image as a material to analyze the application of sports image detection technology. In this study, image detection technology edge detection, grayscale processing, object capture, target recognition, etc. are combined with the actual needs of sports image to achieve a variety of needs for sports image detection. Simultaneously, this study has realized the recognition of athletes, motion recognition, sports behavior judgment, etc. and built a test platform to verify the effectiveness of this research method. The results show that the research method has certain practicality and can provide a theoretical reference for subsequent related research.

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USE CASE 8 :

Social Impact:

Improved Fan Experience: Accurate sports identification enhances the fan experience by providing personalized recommendations and content, which keeps viewers engaged and satisfied. Sports identification technology can be used to educate the public about various sports, including lesser-known or niche ones, promoting cultural awareness and diversity.

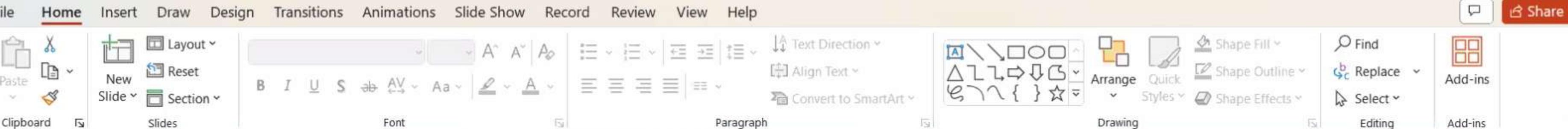
Business Impact:

Content Personalization : Accurate sports identification allows businesses to offer personalized content and recommendations, increasing user engagement and retention in streaming platforms, sports networks, and online communities.

Businesses can expand into new markets or regions by tailoring their content offerings to the sports preferences of local audiences, potentially leading to increased market share and revenue.

Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.

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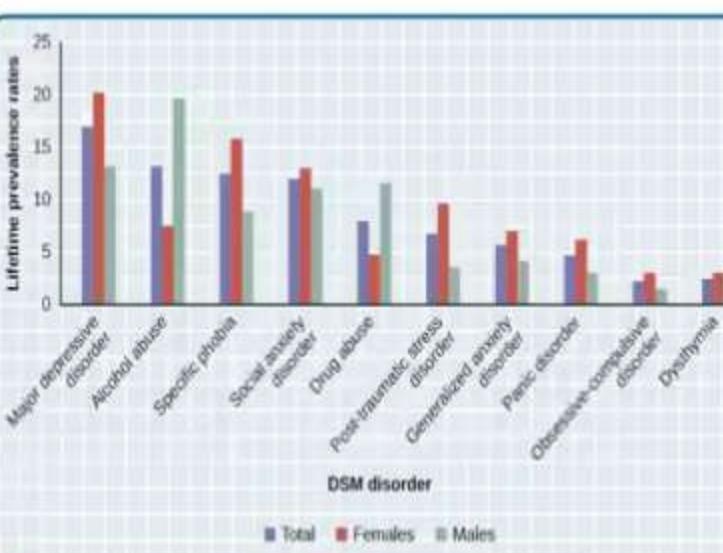
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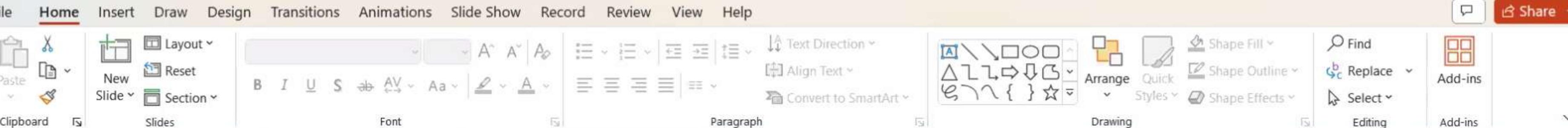


USE CASE 9: Mental Health Prediction Using Machine Learning



Mental Health First Aid teaches participants how to notice and support an individual who may be experiencing a mental health or substance use concern or crisis and connect them with the appropriate employee resources. Employers can offer robust benefits packages to support employees who go through mental health issues. That includes Employee Assistance Programs, Wellness programs that focus on mental and physical health, Health and Disability Insurance, or flexible working schedules or time off policies. Organizations that incorporate mental health awareness help to create a healthy and productive work environment that reduces the stigma associated with mental illness, increases the organizations' mental health literacy, and teaches the skills to safely and responsibly respond to a co-worker's mental health concern. The main purpose of the Mental Health Prediction system is to predict whether a person needs to seek Mental health treatment or not based on inputs provided by them.

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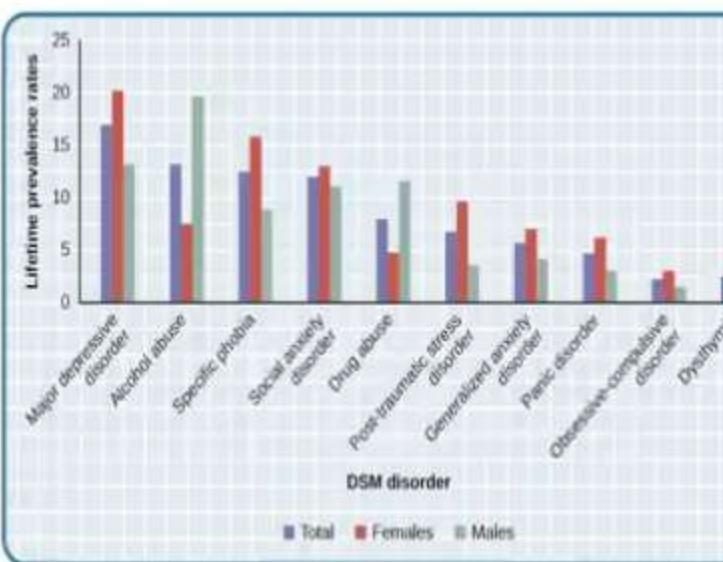
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USE CASE 9:



SOCIAL IMPACT:

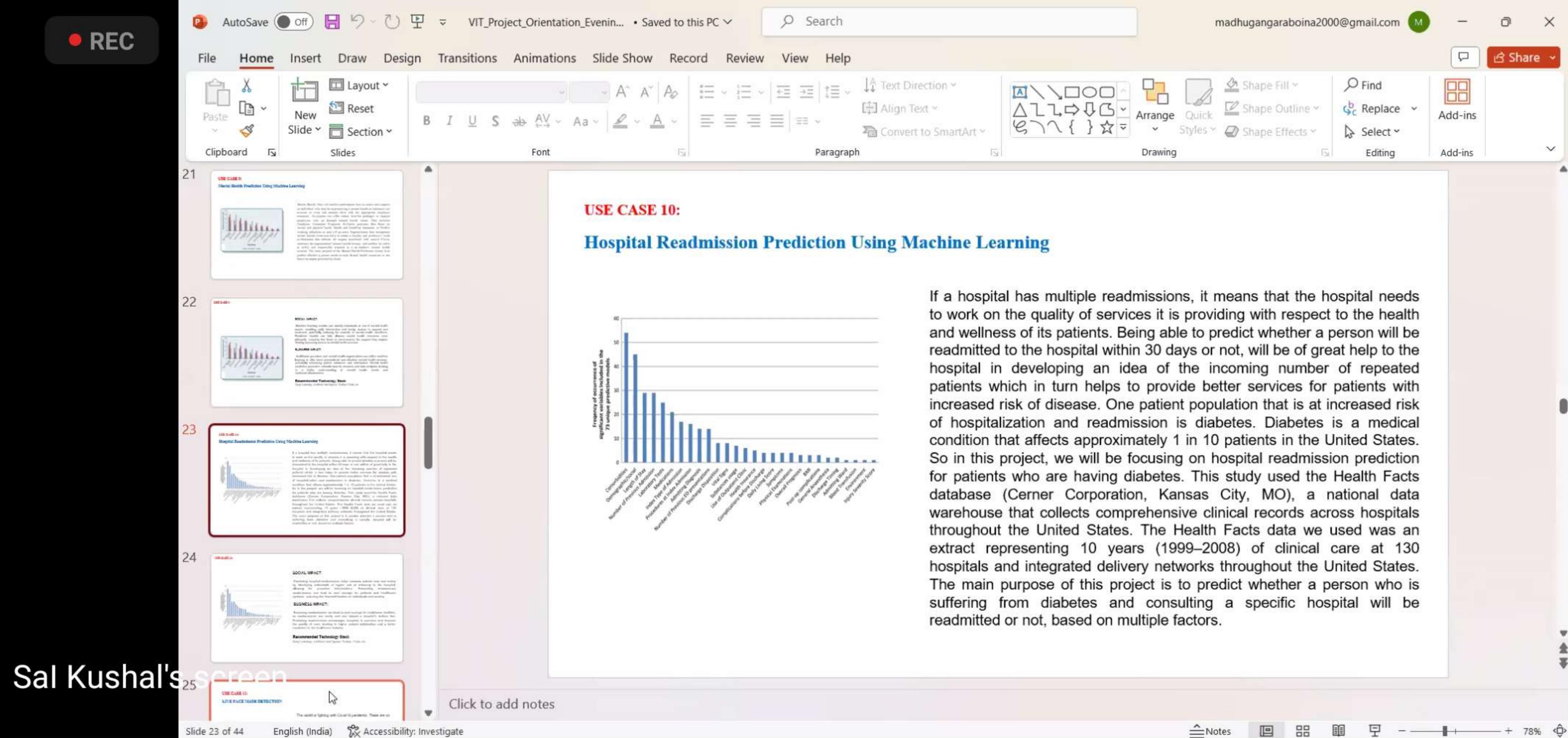
Machine learning models can identify individuals at risk of mental health issues, enabling early intervention and timely access to support and treatment, potentially reducing the severity of mental health conditions. Predictive models can help allocate mental health resources more efficiently, ensuring that those in need receive the support they require, thereby improving access to mental health services.

BUSINESS IMPACT:

Healthcare providers and mental health organizations can utilize machine learning to offer more personalized and effective mental health services, potentially increasing patient outcomes and satisfaction. Mental health prediction generates valuable data for research and data analytics, leading to a better understanding of mental health trends and treatment effectiveness.

Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.



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USE CASE 10: Mental Health Prediction Using Machine Learning

USE CASE 10: Mental Health Prediction Using Machine Learning

USE CASE 10: Mental Health Prediction Using Machine Learning

USE CASE 10: Mental Health Prediction Using Machine Learning

SOCIAL IMPACT:

Predicting hospital readmissions helps enhance patient care and safety by identifying individuals at higher risk of returning to the hospital, allowing for proactive interventions. Preventing unnecessary readmissions can lead to cost savings for patients and healthcare systems, reducing the financial burden on individuals and society.

BUSINESS IMPACT:

Reducing readmissions can lead to cost savings for healthcare facilities, as readmissions are costly and can impact a hospital's bottom line. Predicting readmissions encourages hospitals to maintain and improve the quality of care, leading to higher patient satisfaction and a better reputation in the healthcare industry.

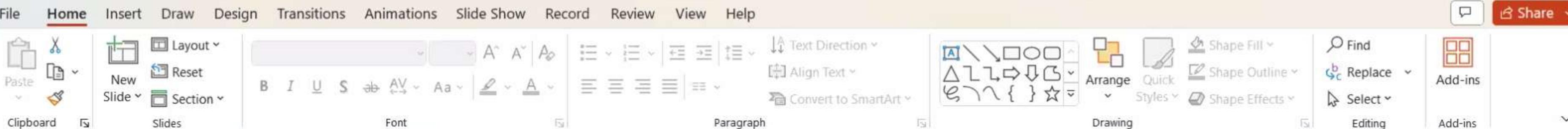
Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.

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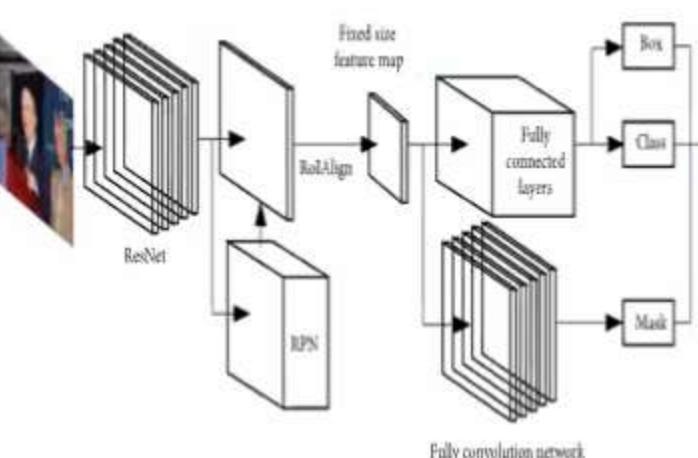
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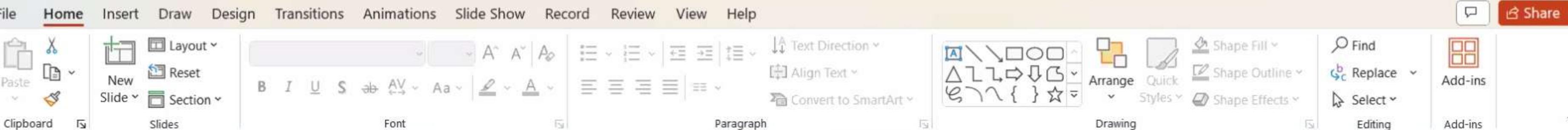
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USE CASE 11: LIVE FACE MASK DETECTION



The world is fighting with Covid19 pandemic. There are so many essential types of equipment needed to fight against the Coronavirus. One such essential is Face Mask. Firstly face mask was not mandatory for everyone but as the day progresses scientists and Doctors recommended everyone wear a face mask. Now To detect whether a person is wearing Face Mask or not we will be training a deep learning model and building a flask app for video streaming and detection.

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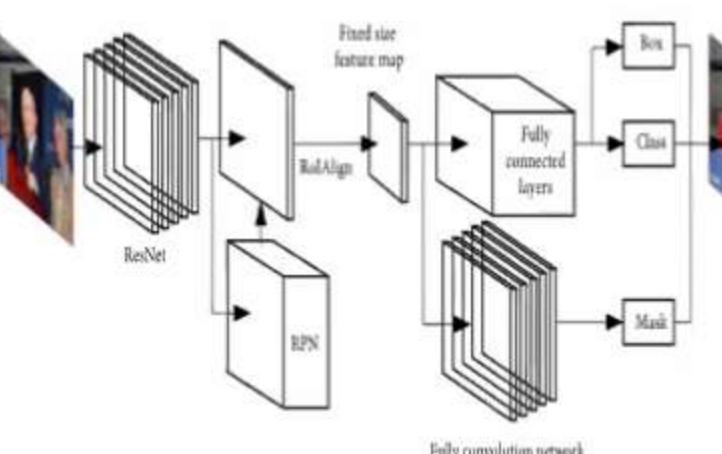
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USE CASE 11:



SOCIAL IMPACT:

Face mask detection contributes to public health and safety by encouraging compliance with mask-wearing mandates, reducing the risk of virus transmission in public spaces. Implementing such technology can educate the public about the importance of mask-wearing in preventing the spread of diseases and promoting community health.

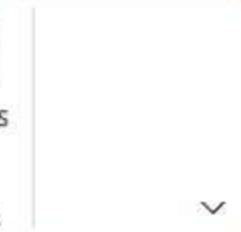
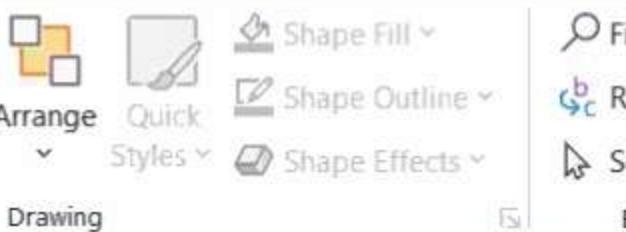
BUSINESS IMPACT:

Businesses and event organizers can use mask detection to ensure compliance at venues, promoting public safety and facilitating the reopening of entertainment and hospitality sectors. Businesses can deploy face mask detection in workplaces to create safe environments for employees, reducing the risk of outbreaks among staff.

Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.

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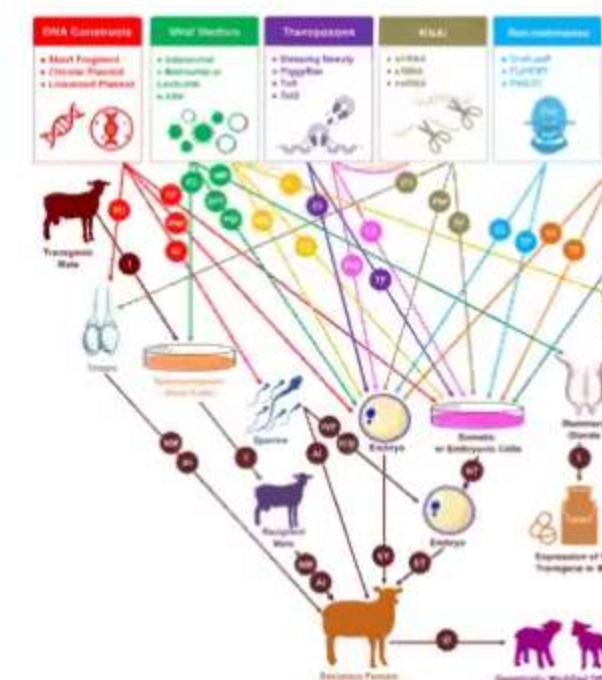
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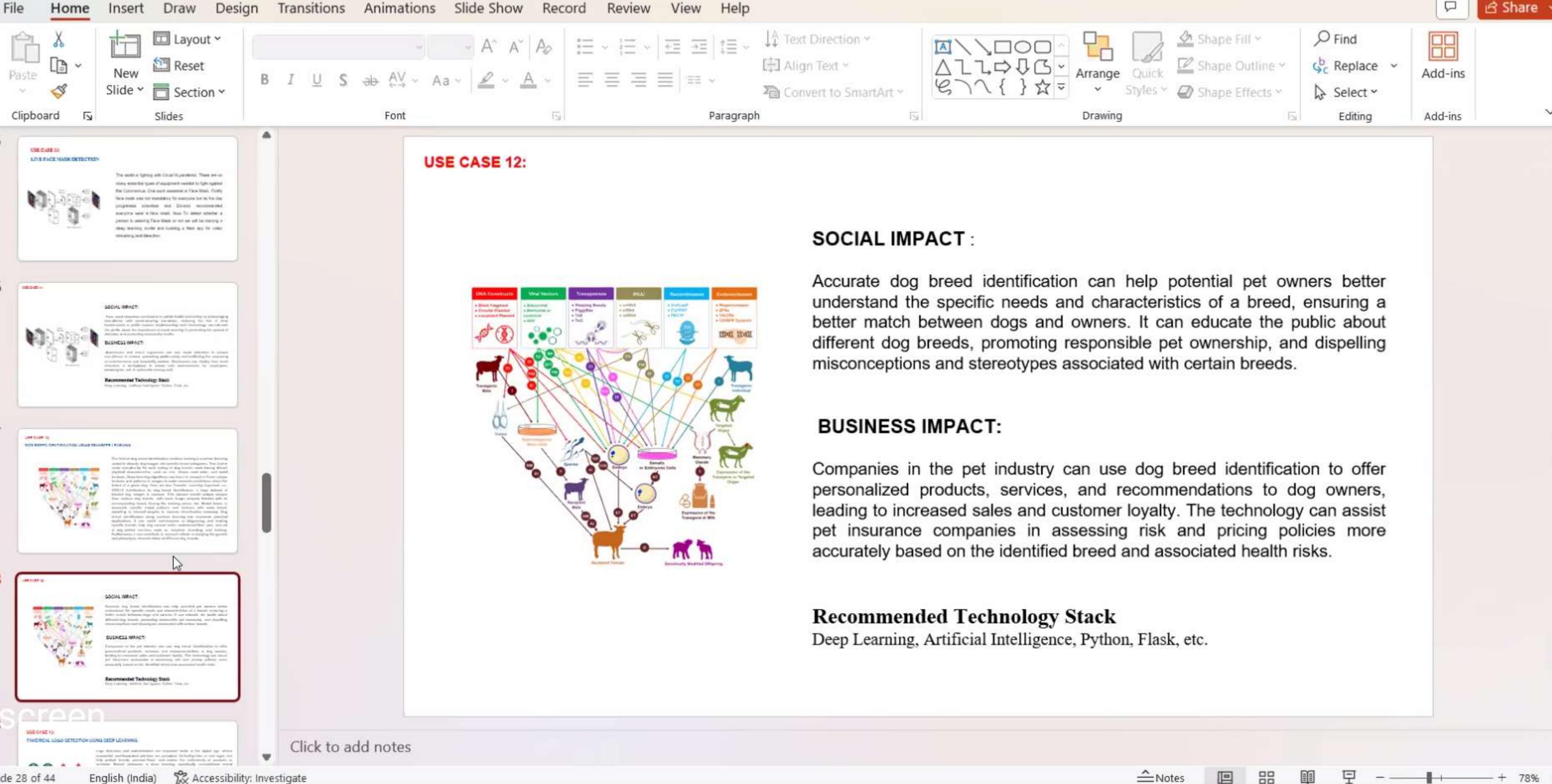
USE CASE 12: DOG BREED IDENTIFICATION USING TRANSFER LEARNING



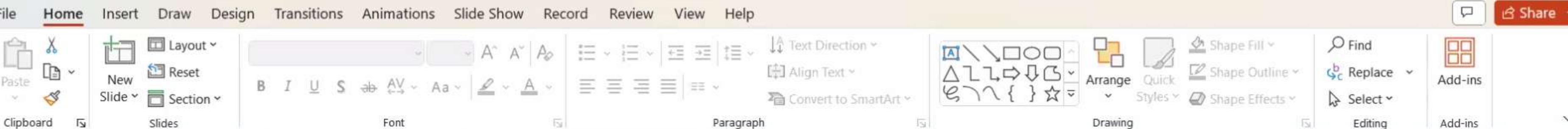
The field of dog breed identification involves training a machine learning model to classify dog images into specific breed categories. This task is made complex by the wide variety of dog breeds, each having distinct physical characteristics, such as size, shape, coat color, and facial features. Deep learning algorithms can learn to recognize these unique features and patterns in images to make accurate predictions about the breed of a given dog. Here we use Transfer Learning Approach i.e., VGG19 Architecture for dog breed identification, a large dataset of labeled dog images is required. This dataset should include images from various dog breeds, with each image properly labeled with its corresponding breed. During the training phase, the Model learns to associate specific visual patterns and features with each breed, adjusting its internal weights to improve classification accuracy. Dog breed identification using machine learning has numerous practical applications. It can assist veterinarians in diagnosing and treating specific breeds, help dog owners better understand their pets, and aid in dog-related services such as adoption, breeding, and training. Furthermore, it can contribute to research efforts in studying the genetic and phenotypic characteristics of different dog breeds.

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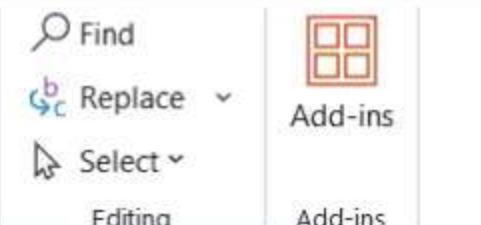
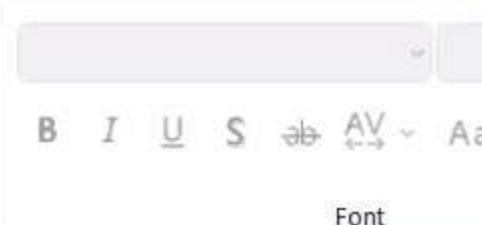
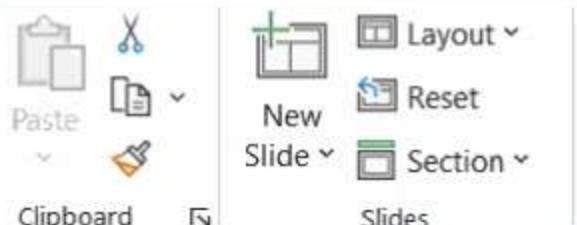
Sal Kushal's screen

USE CASE 13: FAKE/REAL LOGO DETECTION USING DEEP LEARNING



Logo detection and authentication are important tasks in the digital age, where counterfeit and fraudulent activities are prevalent. Detecting fake or real logos can help protect brands, prevent fraud, and ensure the authenticity of products or services. Recent advances in deep learning, specifically convolutional neural networks (CNNs), have proven effective in image recognition tasks, including logo detection. VGG19 is a popular CNN architecture known for its accuracy in image classification tasks. Leveraging VGG19 for fake/real logo detection involves a two-step process: training and inference. The model learns to extract features from logo images and differentiate between real and fake versions based on the provided labels. Once the VGG19 model is trained, it can be used for inference on new logo images to predict whether they are real or fake. The logo images are fed into the trained model, which processes them through its layers and generates predictions. The model outputs probabilities or confidence scores indicating the likelihood of the logo being real or fake. The predictions can be further analyzed and thresholded to make a binary decision (real or fake) based on a predetermined threshold value. This enables automated logo authentication and detection, aiding in the identification of counterfeit products or unauthorized logo usage. By leveraging the power of deep learning and CNNs, this approach enables automated and accurate identification of real and fake logos, contributing to a safer and more secure environment for businesses and consumers.

Click to add notes

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USE CASE 13:

SOCIAL IMPACT :

Accurate logo detection builds consumer trust by reducing the spread of counterfeit and fake products, ensuring that consumers can rely on authentic branding. Logo detection supports the protection of intellectual property, discouraging counterfeit goods and trademark infringement.

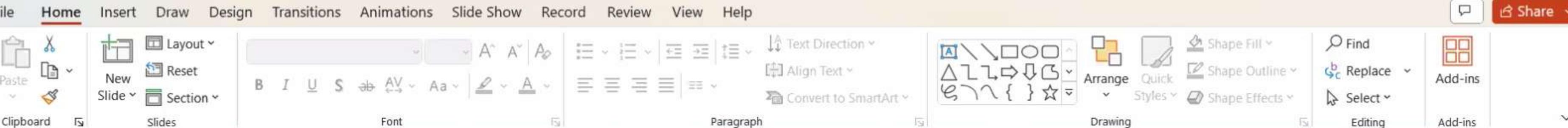
BUSINESS IMPACT:

Companies that actively employ logo detection to protect their brands' integrity can maintain or enhance their reputation and customer trust. Companies that actively employ logo detection to protect their brands' integrity can maintain or enhance their reputation and customer trust.

Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.

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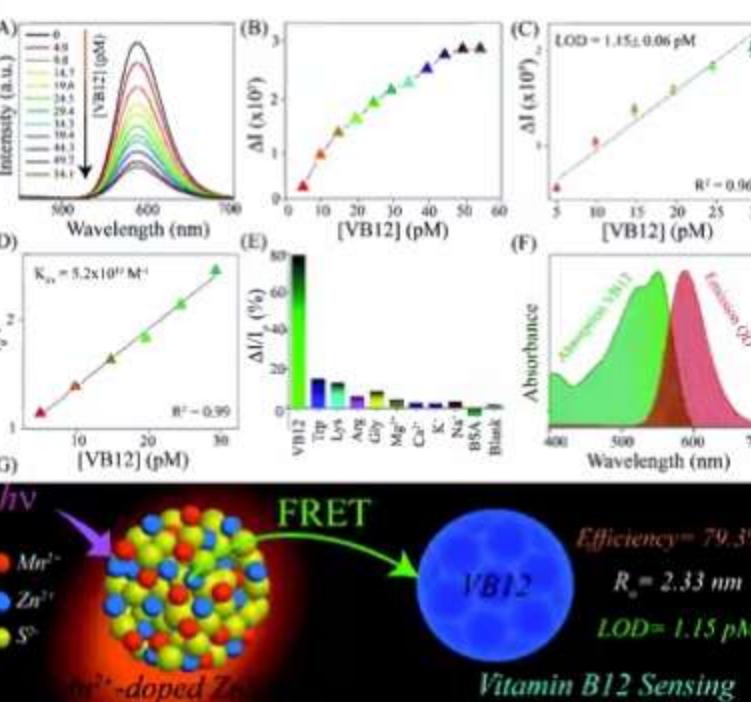
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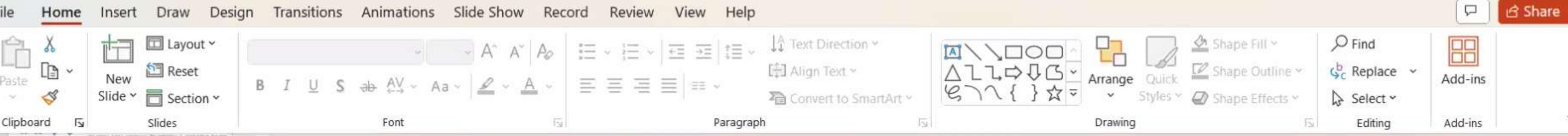
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USE CASE 14:

VITAMIN DETECTION USING DEEP LEARNING



Vitamins are essential nutrients found in various foods that are crucial for maintaining overall health and well-being. Different foods contain different types and quantities of vitamins, making it important to identify and quantify the presence of vitamins in various food items accurately. Traditional methods of vitamin analysis can be time-consuming and require specialized equipment and expertise. With recent advancements in deep learning and computer vision techniques, it is now possible to leverage pre-trained convolutional neural networks (CNNs) like VGG19 for identifying vitamins present in food. VGG19 is a popular CNN architecture known for its accuracy in image recognition tasks. The predictions can be further analyzed to determine the quantities or levels of vitamins present in the food items. This information can be valuable for nutritional analysis, dietary planning, and ensuring adequate vitamin intake. Using VGG19 for identifying vitamins in food can significantly improve the efficiency and accuracy of vitamin analysis. By leveraging the power of deep learning and computer vision, this approach enables rapid and automated identification of vitamins in food items, potentially revolutionizing the way we assess and manage nutrition.

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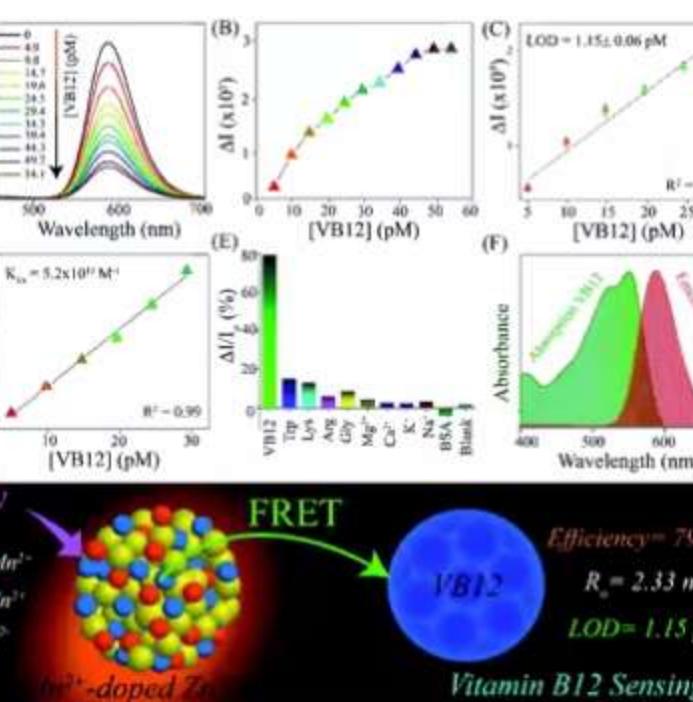


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USE CASE 14:



SOCIAL IMPACT:

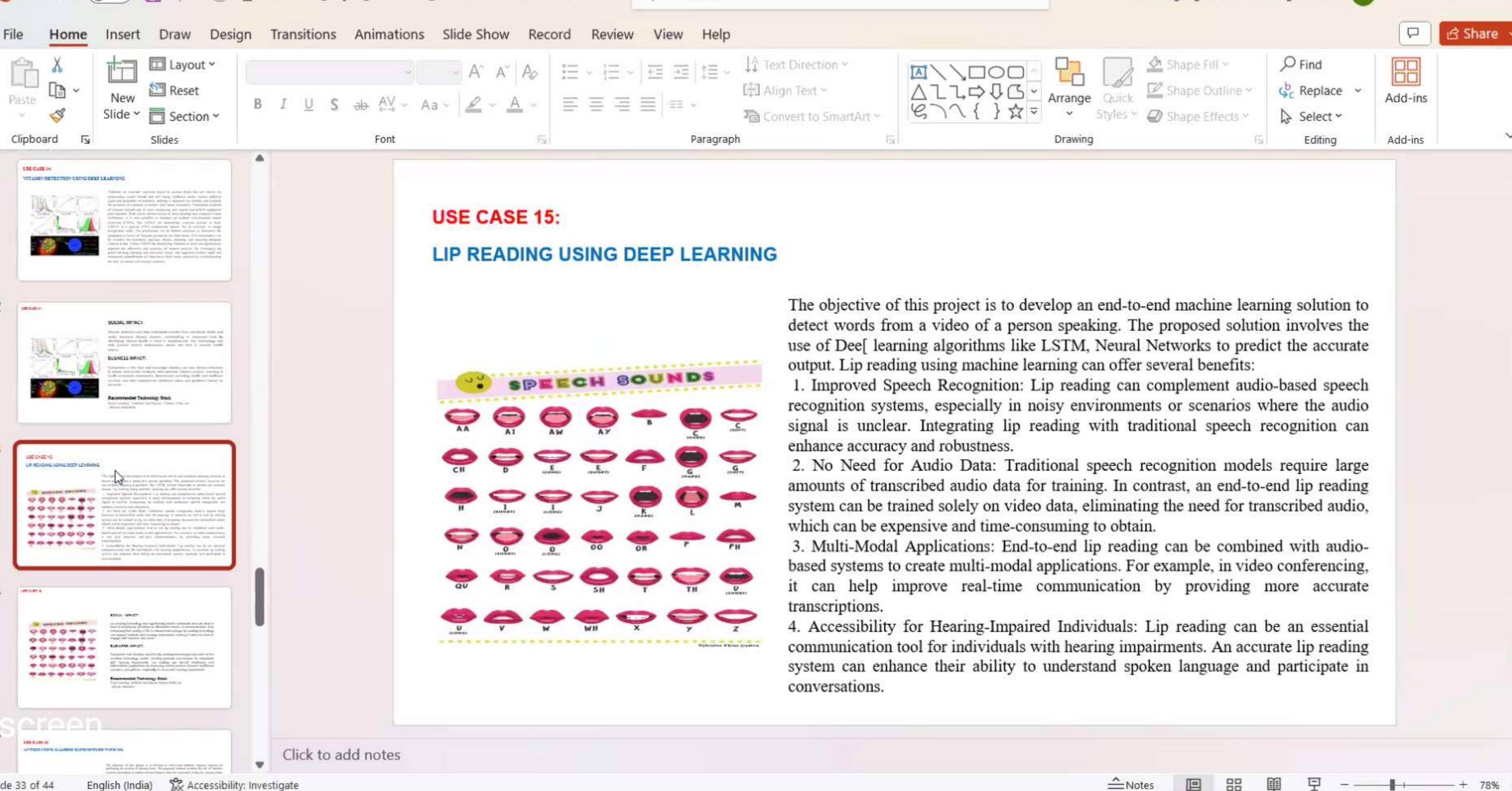
Vitamin detection can help individuals monitor their nutritional intake and make informed dietary choices, contributing to improved health. By identifying vitamin levels in food or supplements, this technology can help prevent vitamin deficiencies, which can lead to various health issues.

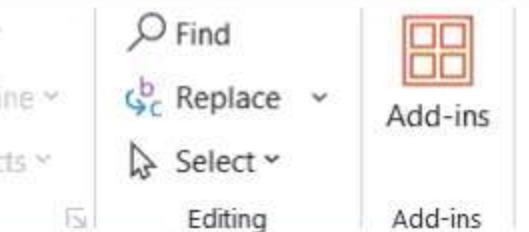
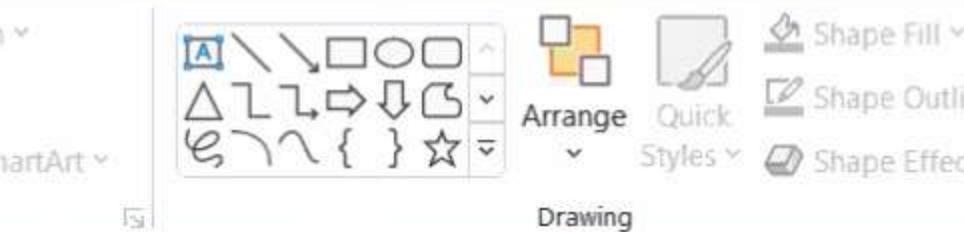
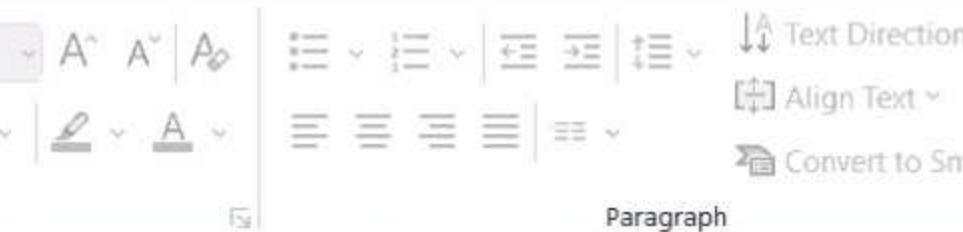
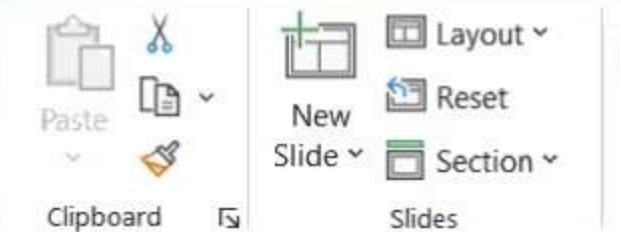
BUSINESS IMPACT:

Companies in the food and beverage industry can use vitamin detection to create and market products with accurate vitamin content, catering to health-conscious consumers. Businesses providing health and wellness services can offer customized nutritional plans and guidance based on accurate.

Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.
vitamin detection.

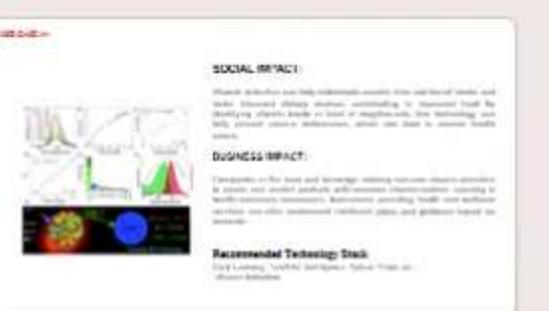


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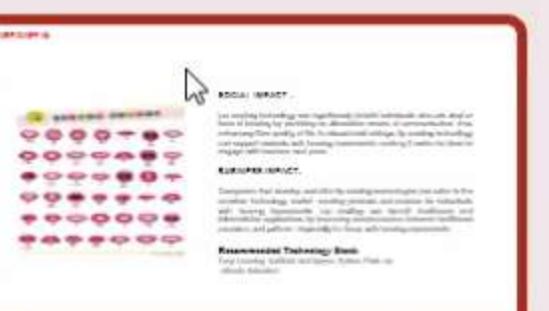
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USE CASE 15:



SOCIAL IMPACT :

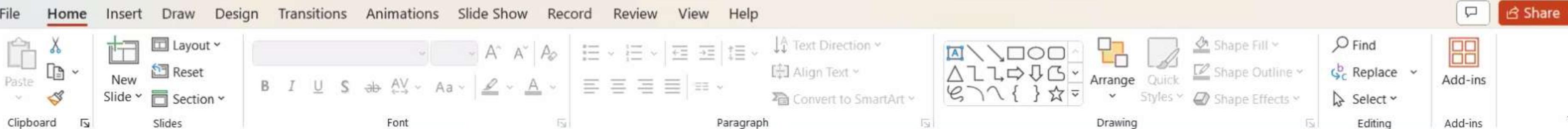
Lip reading technology can significantly benefit individuals who are deaf or hard of hearing by providing an alternative means of communication, thus enhancing their quality of life. In educational settings, lip reading technology can support students with hearing impairments, making it easier for them to engage with teachers and peers.

BUSINESS IMPACT:

Companies that develop and offer lip reading technologies can cater to the assistive technology market, creating products and services for individuals with hearing impairments. Lip reading can benefit healthcare and telemedicine applications by improving communication between healthcare providers and patients, especially for those with hearing impairments.

Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.
vitamin detection.

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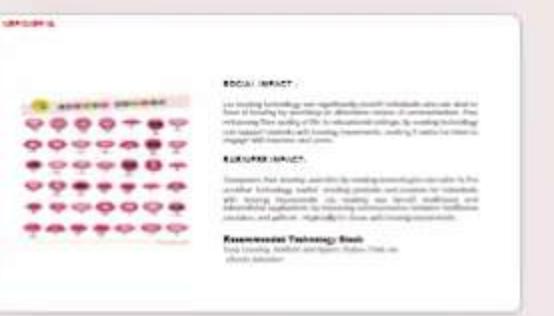
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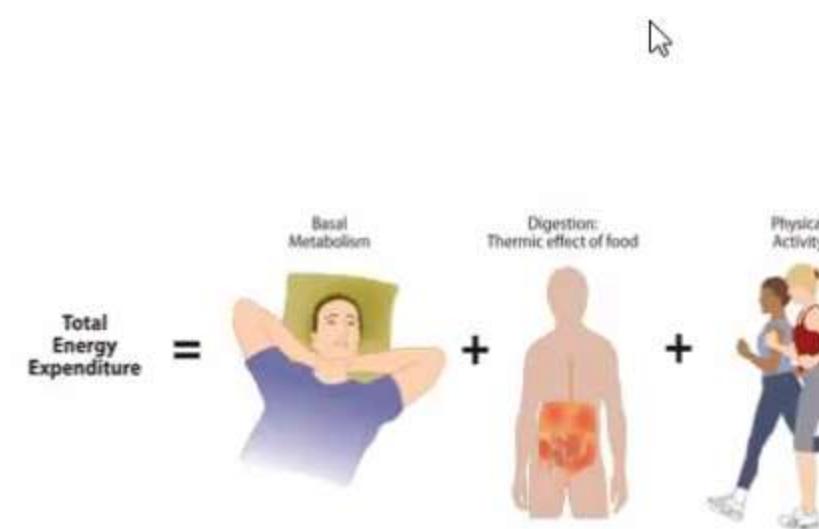
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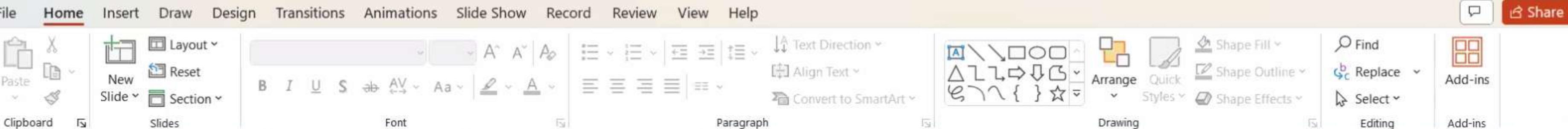
USE CASE 16: ANTICIPATING CALORIC EXPENDITURE WITH ML



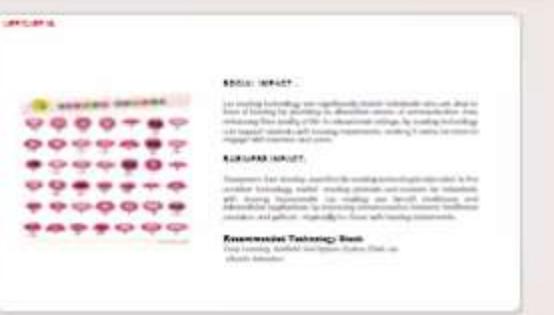
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The objective of this project is to develop an end-to-end machine learning solution for predicting the number of calories burnt. The proposed solution involves the use of Machine learning algorithms to extract relevant features from the input and predict the calories burnt. Creating an end-to-end machine learning project to predict calories burnt can offer a range of benefits, both from a health perspective and as a showcase of machine learning capabilities. Here are some of the key advantages:

1. Personalized Fitness Guidance: By predicting calorie burnt during different activities, machine Learning models can provide personalized fitness recommendations. Users can receive tailored exercise plans and activity suggestions based on their goals, fitness level, and preferences.
2. Optimized Workouts: Calorie prediction can help individuals optimize their workouts by selecting activities that align with their desired calorie burn. This can lead to more efficient and effective exercise routines, preventing wasted time on activities that might not align with their goals.
3. Weight Management: For individuals looking to manage their weight, understanding their predicted calorie expenditure can be crucial. It allows them to balance their calorie intake with their calorie burn, making informed decisions about their diet and exercise regimen.
4. Motivation and Accountability: Tracking calories burned can motivate individuals to stay active and achieve their fitness goals. Machine learning-powered apps can provide real-time feedback and progress updates, which can boost motivation and hold users accountable.

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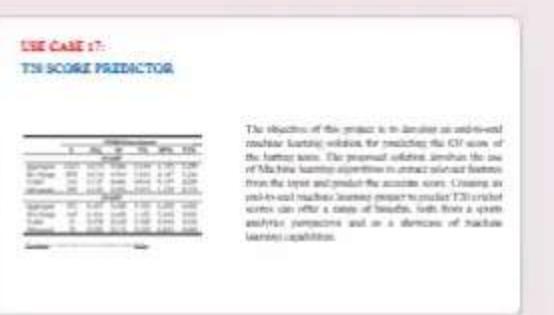
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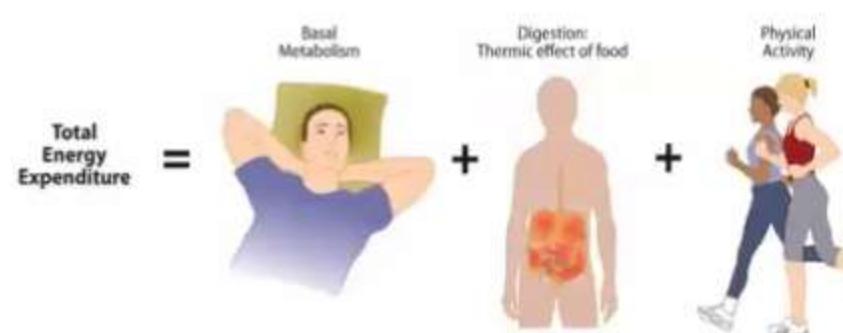
36



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**Sal Kushal's screen**

USE CASE 16:



SOCIAL IMPACT :

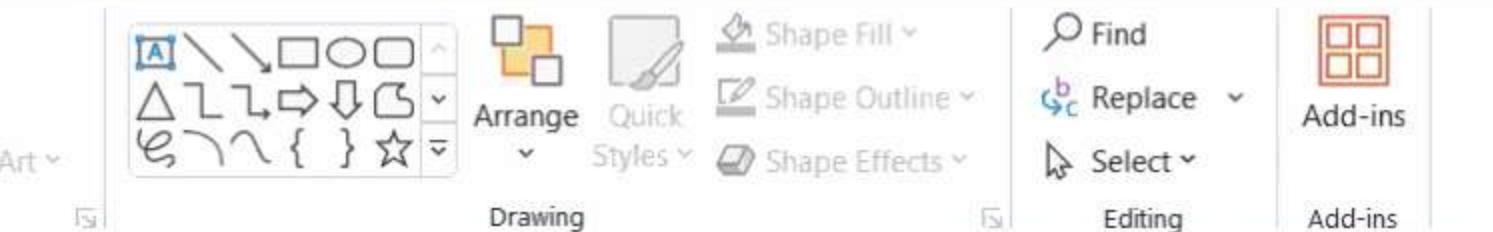
ML models that anticipate caloric expenditure can encourage individuals to be more conscious of their physical activity and overall health, potentially leading to healthier lifestyles and reduced risk of obesity and related health issues. ML-driven caloric expenditure prediction can contribute to research in nutrition, exercise science, and public health, helping researchers better understand human metabolism.

BUSINESS IMPACT :

Companies in the fitness and health app industry can integrate caloric expenditure prediction to offer users personalized workout plans and nutrition tracking, leading to increased user engagement and subscriptions. ML-driven caloric expenditure prediction can benefit athletes and sports organizations in optimizing training and nutrition plans to enhance performance.

Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.
vitamin detection.

REC

34



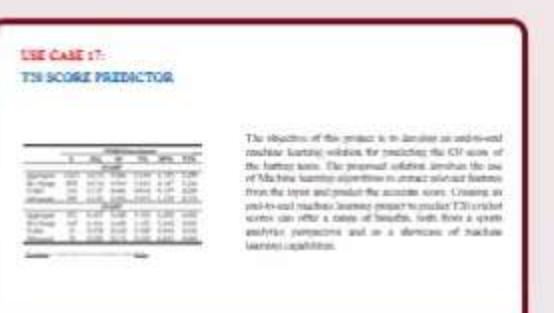
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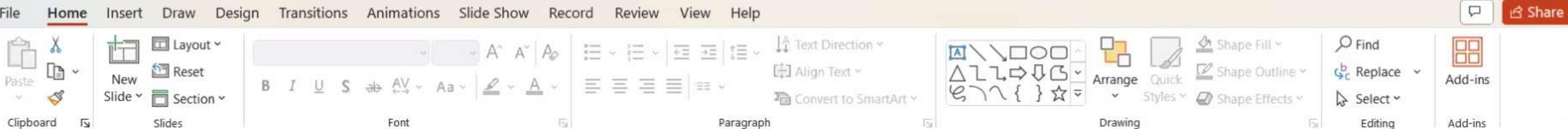
Sal Kushal's screen

USE CASE 17: T20 SCORE PREDICTOR

Prediction Scores						
	n	Avg	Sd	5%	50%	95%
P2APP						
Aggregate	1,511	0.153	0.061	0.044	0.155	0.258
No change	859	0.143	0.060	0.041	0.147	0.246
Failed	244	0.137	0.061	0.034	0.147	0.240
Advanced	408	0.183	0.056	0.093	0.178	0.274
P3APP						
Aggregate	252	0.417	0.189	0.128	0.402	0.695
No change	142	0.392	0.185	0.129	0.384	0.693
Failed	32	0.348	0.185	0.100	0.344	0.656
Advanced	78	0.492	0.176	0.233	0.492	0.699

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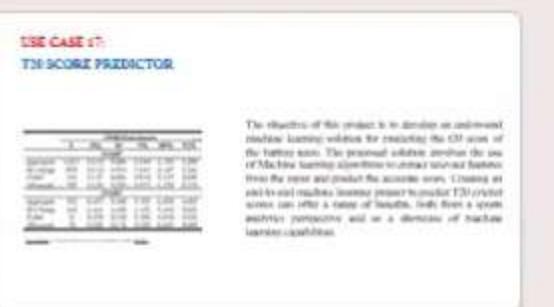
The objective of this project is to develop an end-to-end machine learning solution for predicting the t20 score of the batting team. The proposed solution involves the use of Machine learning algorithms to extract relevant features from the input and predict the accurate score. Creating an end-to-end machine learning project to predict T20 cricket scores can offer a range of benefits, both from a sports analytics perspective and as a showcase of machine learning capabilities.

REC

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Sal Kushal's screen

40



USECASE 17:

Prediction Scores						
	n	Avg	Sd	5%	50%	95%
P2APP						
Aggregate	1,511	0.153	0.061	0.044	0.155	0.258
No change	859	0.143	0.060	0.041	0.147	0.246
Failed	244	0.137	0.061	0.034	0.147	0.240
Advanced	408	0.183	0.056	0.093	0.178	0.274
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No change	142	0.392	0.185	0.129	0.384	0.693
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Advanced	78	0.492	0.176	0.233	0.492	0.699

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SOCIAL IMPACT :

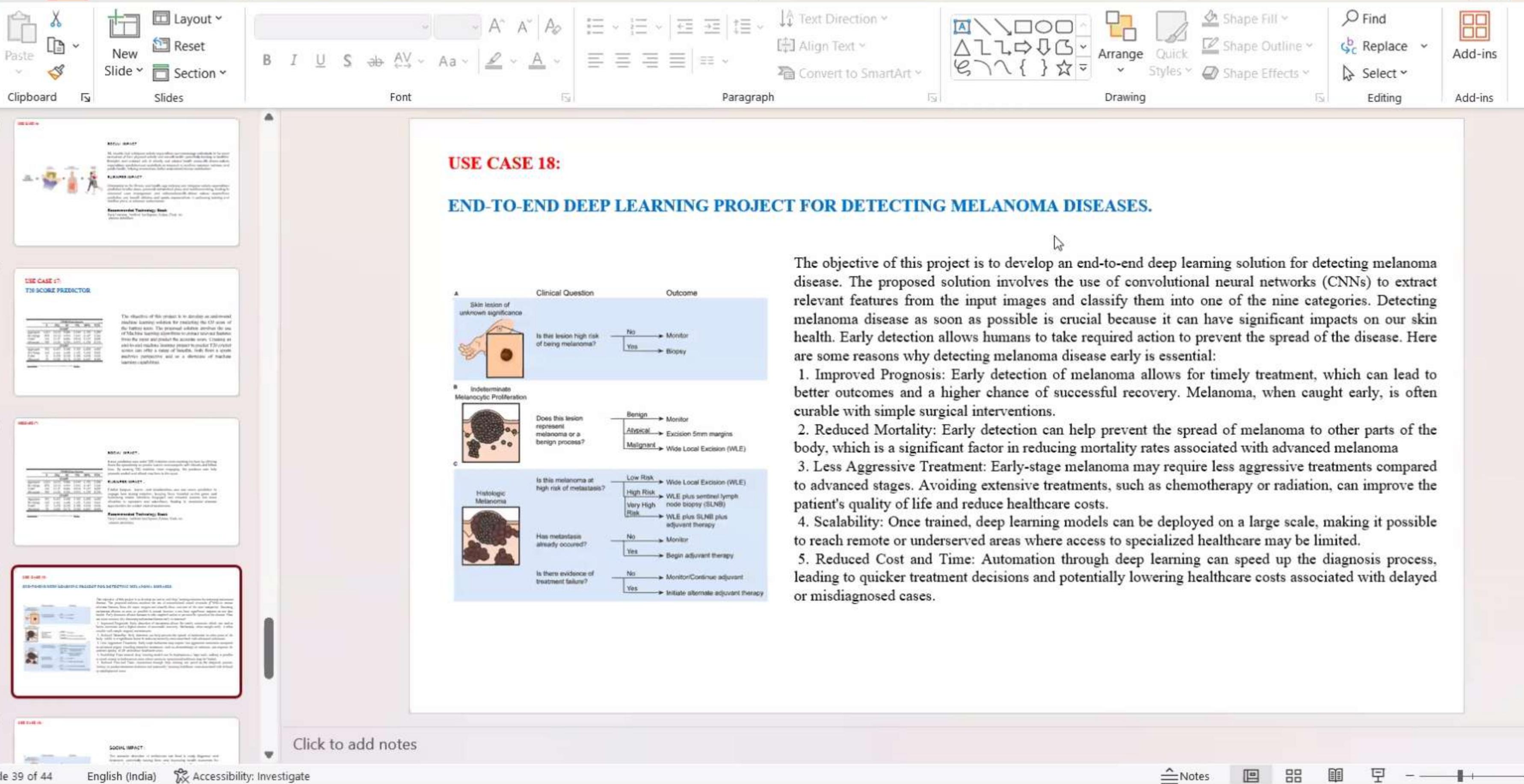
Score prediction can make T20 matches more exciting for fans by offering them the opportunity to predict scores and compete with friends and fellow fans. By making T20 matches more engaging, the predictor can help promote cricket and attract new fans to the sport.

BUSINESS IMPACT :

Cricket leagues, teams, and broadcasters can use score prediction to engage fans during matches, keeping them invested in the game and increasing viewer retention. Engaged and retained viewers are more attractive to sponsors and advertisers, leading to increased revenue opportunities for cricket-related businesses.

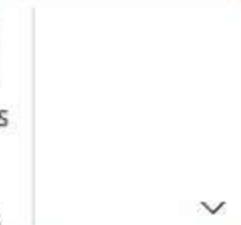
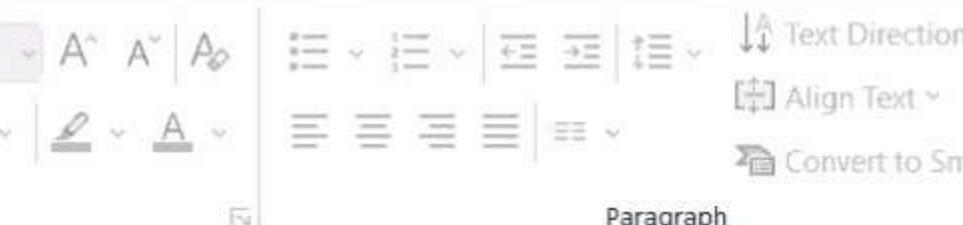
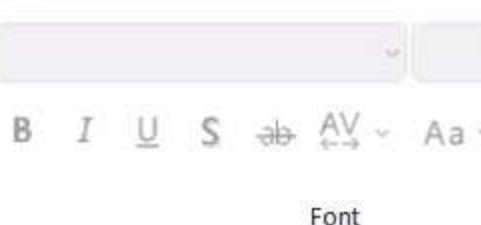
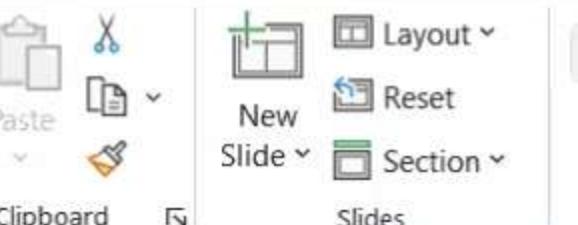
Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.
vitamin detection.



REC

File Home Insert Design Transitions Animations Slide Show Record Review View Help



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Sal Kushal's screen



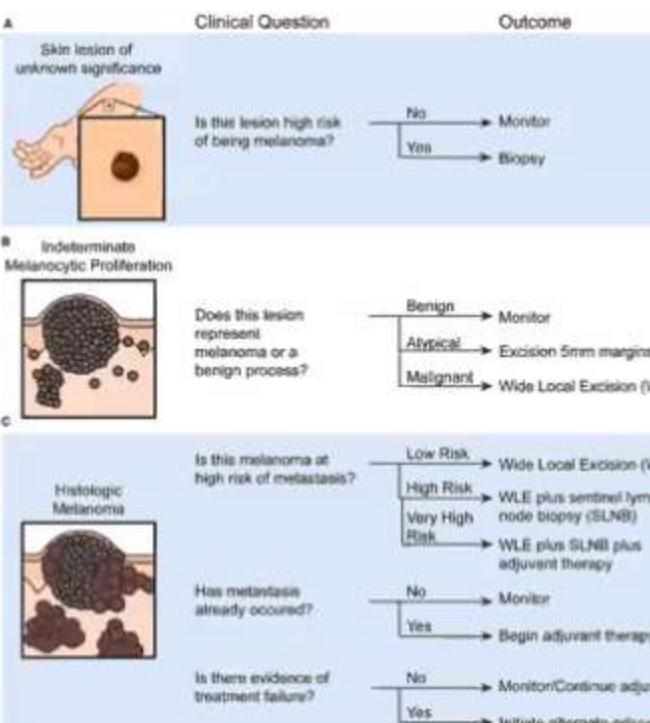
Slide 40 of 44

English (India)

Accessibility: Investigate

Click to add notes

USE CASE 18:



SOCIAL IMPACT :

The accurate detection of melanoma can lead to early diagnosis and treatment, potentially saving lives and improving health outcomes for patients. Early detection can reduce the burden on healthcare systems, as it can potentially lower the cost and resources required for advanced cancer treatments.

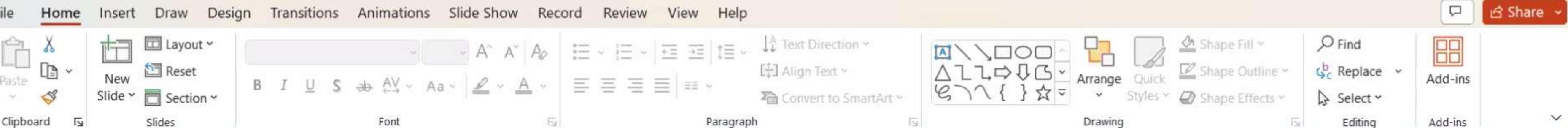
BUSINESS IMPACT :

Healthcare providers, clinics, and telemedicine companies can offer melanoma detection services as part of their offerings, potentially increasing patient visits and revenues. Companies specializing in medical devices and technology can develop and market innovative tools for melanoma detection, creating new product lines and revenue streams.

Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.
vitamin detection.

REC



USE CASE 19: POTATO DISEASE CLASSIFICATION



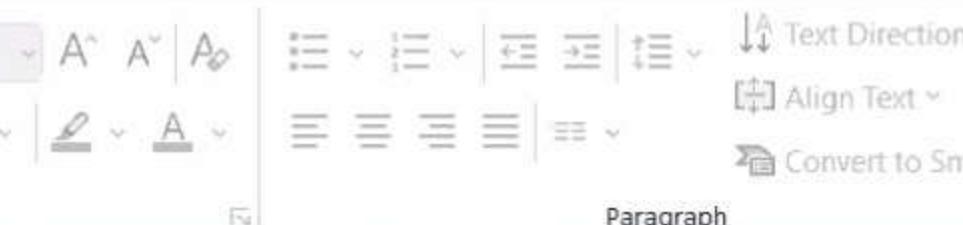
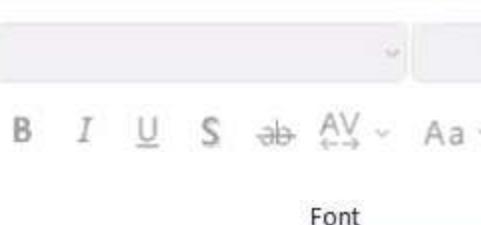
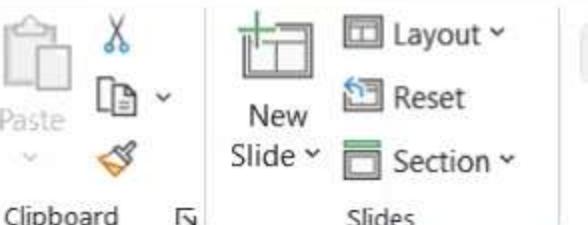
The objective of this project is to develop an end-to-end deep learning solution for classifying potato leaf images into three categories: healthy, early blight, and late blight. The proposed solution involves the use of convolutional neural networks (CNNs) to extract relevant features from the input images and classify them into one of the three categories. Predicting potato leaf disease as soon as possible is crucial because it can have significant impacts on crop yield and quality. Early detection allows farmers to take prompt action to prevent the spread of the disease and reduce crop damage. Here are some reasons why predicting potato leaf disease early is essential:

1. Minimize crop loss: Potato leaf disease can significantly reduce crop yield and quality. By predicting the disease early, farmers can take timely measures to control its spread, thereby minimizing crop loss.
2. Reduce cost: Early detection of potato leaf disease can help farmers reduce costs associated with disease control measures, such as pesticides and other treatments. By identifying the disease early, farmers can target the specific area of the crop affected, which helps in reducing the overall cost of control measures.
3. Protect the environment: The excessive use of pesticides and other control measures can have negative impacts on the environment. Early detection of potato leaf disease can help farmers target only the affected areas and minimize the use of pesticides, reducing their environmental impact.
4. Improve crop quality: Potato leaf disease can affect the quality of the crop, making it less desirable to buyers. By predicting the disease early, farmers can take appropriate measures to prevent its spread, thereby improving the overall quality of the crop.

Sal Kushal's screen

REC

File Home Insert Draw Design Transitions Animations Slide Show Record Review View Help



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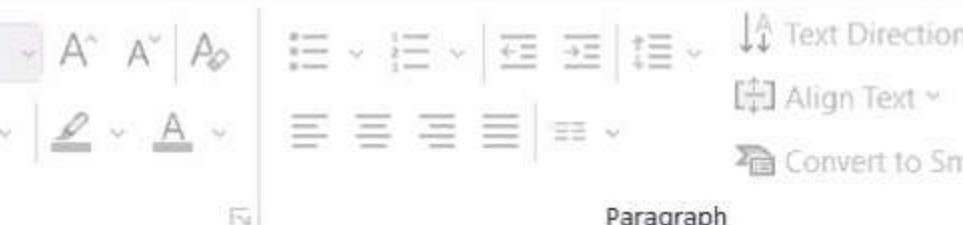
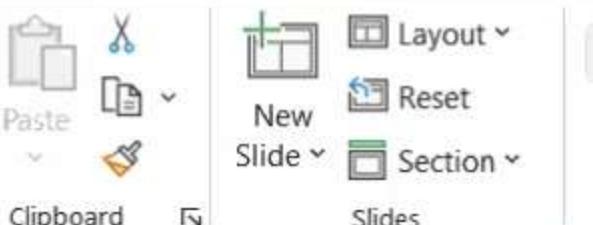


44



Sal Kushal's screen

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REC

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Sal Kushal's screen

Slide 43 of 44

English (India)

Accessibility: Investigate

Click to add notes

Notes



78%



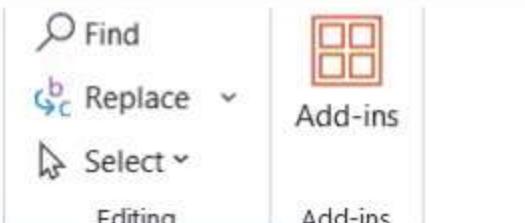
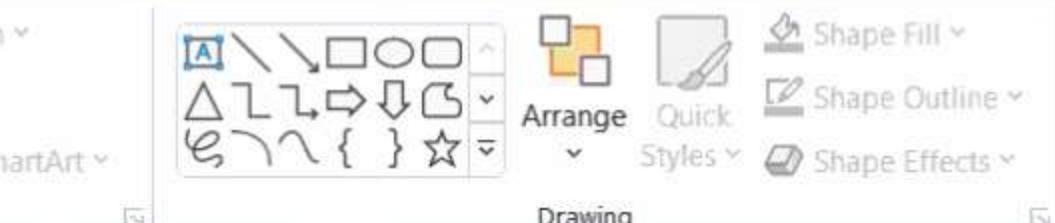
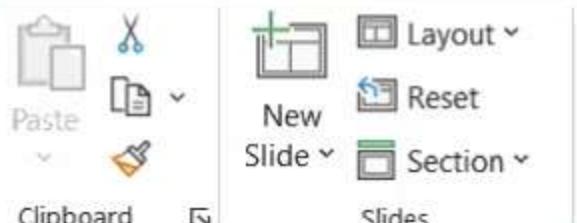
USE CASE 20:

AI BODY LANGUAGE DETECTOR USING MEDIPIPE



The objective of this project is to develop an end-to-end machine learning solution to detect body language and classify into four categories: happy, sad, victorious and fight. The proposed solution involves the use of machine learning algorithms like Logistic Regression, Ridge Classifier to predict the accurate output. Detecting body language using machine learning can offer several benefits:

1. Enhanced Communication Understanding: By analyzing body language cues such as facial expressions, gestures, and posture, machine learning algorithms can provide insights into the underlying emotions, intentions, and attitudes of individuals. This can help in better understanding non-verbal cues and improving communication comprehension.
2. Improved Interactions: Machine learning models can be trained to interpret body language signals in real-time, facilitating more effective interactions. This can be particularly useful in customer service, sales, negotiations, and other domains where understanding and responding to non-verbal cues can make a significant difference.
3. Emotional Analysis: Body language analysis can help in gauging emotional states accurately. By recognizing facial expressions, body movements, and other physical cues, machine learning algorithms can identify emotions such as happiness, sadness, anger, or surprise. This information can be beneficial in various fields, including mental health, market research, and user experience design.
4. Deception Detection: Machine learning algorithms trained on body language data can assist in detecting signs of deception or dishonesty. Certain physical cues, such as avoiding eye contact, fidgeting, or inconsistent gestures, can indicate potential deception. This can be valuable in security, law enforcement, and forensic investigations.

REC

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Click to add notes

USE CASE 20:



SOCIAL IMPACT :

AI body language detectors can aid individuals with communication challenges, such as those with hearing impairments or autism, by providing additional cues for understanding conversations. AI body language detectors can be used for educational purposes, teaching students and professionals about the significance of body language in various contexts.

BUSINESS IMPACT :

Businesses can use AI body language detectors to improve customer service interactions, providing insights into customer sentiments and needs, and enhancing user experiences. Marketers can use the technology to analyse consumer reactions to advertisements and product presentations, optimizing advertising strategies and product design.

Recommended Technology Stack

Deep Learning, Artificial Intelligence, Python, Flask, etc.
vitamin detection.