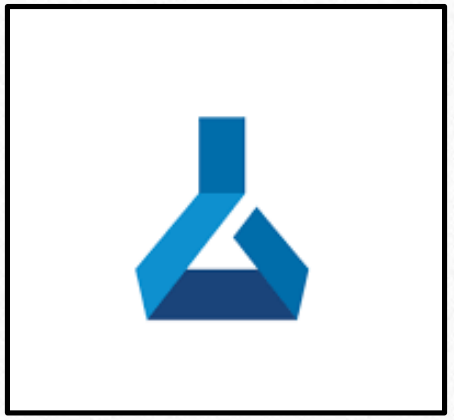
AI Applications on Azure

COURSERA

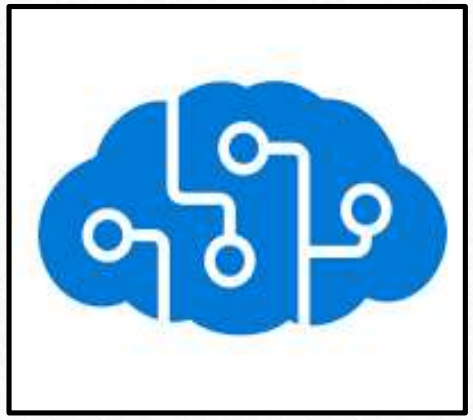
INTRODUCTION :~

- Cloud computing and artificial intelligence (AI) are revolutionising how organisations run.
- Leading cloud computing platform Azure provides a variety of AI services.
- The applications for AI on Azure will be examined in this session.
- Computer vision, speech, language, and search pre-built APIssimple application integrationExamples of applications include speech-to-text, image recognition, chatbots, and translation.

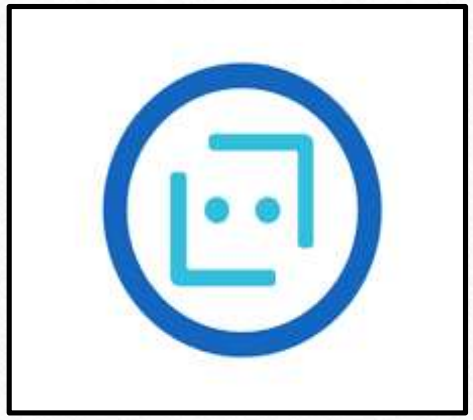
ABOUT SOFTWARE TOOL :~



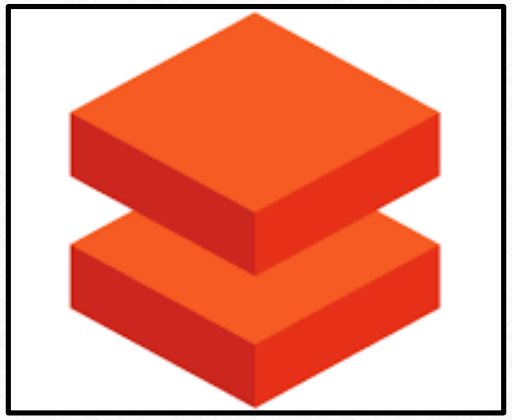
AZURE MACHINE LEARNING



AZURE COGNITIVE SERVICES



AZURE BOT SERVICES



AZURE DATA BRICS

USAGE OF TOOL :~

- Many AI applications on Azure, including Predictive Analytics, Image Recognition, and Natural Language Processing, can leverage
- The Azure Machine Learning: Studio tool. Microsoft Cognitive Services Transcribing spoken words into searchable, legible text.
- For more natural interactions, convert text to lifelike speech. Add real-time speech translation functionality to your apps. Using the audio, identify and confirm the speakers.
- Azure Bot Services: Internet of Things, Hybrid Cloud and Infrastructure, Data and Analytics, Chat Application Development. Secure, scalable, and open edge-to-cloud solutions are used to connect, monitor, and control devices.
- Azure Data Brics : To process, store, purge, share, analyse, model, and monetize their datasets using tools from business intelligence to machine learning.

REPORTED LITERATURE :~

- There is a wide range of literature available on the topic of AI Applications on Azure. Here are some examples of reported literature:

- Azure Machine Learning
- Azure Cognitive Services
- Azure Bot Services
- Azure Data Brics

OBJECTIVE OF PROJECT :~

- The Objective of Report is as follows:
- Increasing the precision of predictive models: Organizations can use Azure's AI to create predictive models that foresee future trends and behaviours based on historical data.
- Automating repetitive jobs: Azure's AI applications can be used to automate repetitive operations, giving staff more time to focus on higher-value tasks.
- Improving client experiences: Azure AI apps may assist companies in better comprehending and addressing consumer needs, which will lead to an increase in customer satisfaction and loyalty.

TIME LINE OF WORK PROPOSAL :~

- Based on the project's scale and complexity, the time of work proposal for an AI application project in Azure can vary greatly. However, the following variables can affect the timeline.
- Planning and investigation: assemble specifications and discover potential applications for AI in Azure Examine and compare various Azure AI tools and services, such as Azure Databricks, Azure Cognitive Services, and Azure Machine Learning. All data sources and integration needs for the AI applications should be identified.
- Model Construction and Data Preparation : Clean up and prepare the data for the AI models . Using Azure Machine Learning or other tools as necessary, create and train AI models . Analyze and improve the models to achieve the best results.
- Development and Testing : Install the AI models on Azure as well as incorporate them into the intended applications Check the performance, dependability, and accuracy of the AI applications.
- Instruction and Documentation : Create user guides and documentation for the AI applications . provide users and stakeholders with training and support Organize a knowledge-transfer meeting to pass the maintenance staff the AI applications.

USED ALGORITHM :-

- The complexity of the algorithm, the quantity of the dataset, and the computational resources available are just a few of the variables that might affect how long an algorithm takes to employ in a project using AI Apps on Azure.
- Because to its complexity and the volume of data needed for training, some methods, including Convolutional Neural Networks (CNN'S), Recurrent Neural Networks (RNN'S), Decision Trees, Random Forests, Support Vector Machines (SVM'S), and K-Nearest Neighbors, can take longer.
- The amount of the dataset can also affect how long it takes to run an algorithm. More computing power may be needed and processing time may increase for larger datasets.
- The amount of time needed to use an algorithm depends on the computing resources available.
- The range of computing resources offered by Azure includes CPUs and GPUs that can be used to speed up the development and application of AI models.

WORK DONE IN STEP BY STEP DESCRIPTION :-

- ✓ An overview of the general procedures for creating and deploying an AI application on Azure is provided below:
- ✓ Describe the issue: Determining the issue you are attempting to tackle is the first step in developing an AI application on Azure.
- ✓ Get the data and preprocess it: Collecting and preprocessing data is the next step after defining the issue.
- ✓ Choose and hone the algorithm: The next stage is to choose and train the algorithm that will be used to solve the problem after the data has been preprocessed.
- ✓ Iterate and improve: The final phase is to refine the model and application depending on user performance data.

RESULTS AND DISCUSSION :-

- The particular project and the objectives established will determine the outcomes and the discussion of a project employing AI Apps on Azure. However, the following broad statements could be made in the project's findings and discussion section:
- Accuracy is one of the most crucial measures for assessing the effectiveness of an AI application.
- Efficiency is a crucial factor to take into account when assessing AI applications on Azure. This covers elements like the model's speed, the amount of memory and processing power needed, and the application's scalability.
- Impact: The broader social, economic, or environmental impacts that an AI application has on Azure are referred to as the application's impact.
- Future directions and restrictions: At last, it It's crucial to talk about an AI application's limitations and point out potential directions for further study and improvement.

SUMMARY :-

- In conclusion, Azure offers a strong platform for creating, implementing, and supporting AI Applications.
- Organizations can follow a systematic workflow for AI Azure projects, which includes data preparation, algorithm selection, model building, testing and validation, deployment, and monitoring and maintenance, thanks to a variety of tools and services available.
- An AI application's results and discussion should examine the model's performance using the right metrics, compare it to other approaches, interpret the results in light of the problem being solved, evaluate its scalability and ethical implications, and point out areas for development.

REFERENCES :-

- Here are some references related to AI Applications on Azure:
- https://azure.microsoft.com/en-in/solutions/ai/
- https://azure.microsoft.com/en-us/products/applied-ai-services
- https://azure.microsoft.com/en-us/products/category/ai

THANK YOU

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