Vishnu Waman Thakur Charitable Trust's
VIVA Institute of Technology
Shirgaon, Virar (East), Dist: Palghar-401305, Maharashtra
Website: www.viva-technology.org

Report on STTP

Topic Name:	Mumbai University & ISTE approved one week STTP on **"Microsoft Azur AI Engineer Associate"**
Organizing Departments:	Department of Master of Computer Applications(MCA), Department of Computer Engineering, Department of Computer Science and Engineering (AI & ML)
Name of the Guest Speaker:	Mr. Abhay Dhanmeher (Trainer in ICT Academy) Mr. Navneet Maurya (Senior developer at Parle Agro)
Date:	9th Dec to 14th Dec 2024
Time:	9am to 4pm
No. of Participants:	21

Program Summary/Details:

The Mumbai university and ISTE-approved offline One Week Short Term Training Program (STTP) on "Microsoft Azur AI Engineer Associate," organized by Department of Master of Computer Applications(MCA), Department of Computer Engineering, Department of Computer Science and Engineering (AI & ML) of VIVA Institute of Technology, Virar (W) in association with ICT academy.

This program is designed to empower educators with the skills to design, develop, and deploy AI solutions using Microsoft Azure. Participants will gain hands-on experience with Azure AI services, including natural language processing, computer vision, and responsible AI principles, enabling them to prepare students for industry-ready AI certifications. The program emphasizes practical knowledge and application, ensuring faculty members can integrate Azure-based AI solutions into their teaching methodologies effectively.

Day 1: 9th Dec 2024

The first day of the training program commenced with an **Introduction to AI on Azure**, where participants were introduced to the capabilities and services offered by Microsoft Azure in the realm of Artificial Intelligence. The session covered key concepts and foundational knowledge, setting the stage for deeper exploration into AI technologies.

The second part of the day focused on **Analyzing Images with Azure AI Vision**. Participants were shown how to use Azure's Computer Vision API to analyze and extract meaningful information from images. This included recognizing objects, categorizing images, and understanding scene context, which are fundamental skills for working with visual data in AI applications.

The final topic of the day, **Reading Text in Images**, explored Azure's Optical Character Recognition (OCR) capabilities. This feature allows AI to detect and extract printed or handwritten text from images, which is especially useful in scenarios like document processing, signage interpretation, and digitizing physical data.

The overall goal of the session was to familiarize participants with practical applications of AI and machine learning tools on the Azure platform, especially in the domain of computer vision and image analysis, preparing them for more advanced topics and hands-on labs in the coming days.

Day 2: 10th Dec 2024

The second day of the training program began with a session on **Classifying Images with an Azure AI Vision Custom Model**. In this segment, participants learned how to create custom image classification models using Azure's Custom Vision service. The session covered the steps of training a model to classify images into specific categories based on user-defined tags. Participants gained hands-on experience in building, training, and evaluating these models, enabling them to customize AI solutions for specific image-related tasks.

Next, the focus shifted to **Analyzing Text**. In this section, participants explored Azure's Text Analytics service, learning how to extract valuable insights from textual data. They were introduced to key features such as sentiment analysis, key phrase extraction, entity recognition, and language detection. This part of the training emphasized how to leverage AI to process and analyze large volumes of text, making it easier to derive actionable insights for various applications like customer feedback analysis, content categorization, and more.

The final topic of the day was **Creating a Question Answering Solution**. In this session, participants learned how to build an intelligent question-answering system using Azure's Cognitive Services. They were shown how to use pre-built models to create solutions that can understand natural language questions and provide relevant answers from a knowledge base, documents, or web content. The session covered how to integrate this AI capability into chatbots, helpdesks, and other interactive systems to improve user experiences and streamline information retrieval.

By the end of the day, participants had a deeper understanding of Azure's AI capabilities in image classification, text analysis, and intelligent question answering, as well as practical experience in applying these tools to real-world scenarios.

Day 3: 11th Dec 2024

The third day of the training program began with a session on **Creating a Language Understanding Model with the Language Service**. In this segment, participants were introduced to Azure's **Language Understanding (LUIS)** service. They learned how to build and train custom language understanding models to interpret and process natural language inputs. The focus was on defining intents, entities, and utterances to create intelligent applications that can understand and respond to user queries in a more human-like manner. This session provided a hands-on experience in building language models that can be integrated into various apps, such as chatbots and virtual assistants.

Next, the training shifted to **Recognizing and Synthesizing Speech**. Participants explored Azure's **Speech Service**, which includes capabilities for speech-to-text (recognizing spoken words) and text-to-speech (synthesizing spoken output from text). The session covered key use cases, such as converting spoken language into written text for transcription, enabling voice commands for applications, and generating natural-sounding speech from written content. Participants also had the opportunity to experiment with customizing speech models to recognize specific accents, languages, and voices, as well as adding features like real-time speech translation.

The final topic of the day was **Integrating Azure OpenAI into Your App**. Here, participants learned how to integrate advanced AI models from **Azure OpenAI** into their applications. The session focused on using models like GPT for natural language processing tasks such as text generation, conversation, summarization, and sentiment analysis. Participants were shown how to set up and interact with the OpenAI API, enabling them to add cutting-edge AI capabilities to their own projects. Real-world use cases included building intelligent chatbots, content generation tools, and applications for customer support or data analysis.

By the end of the day, participants had gained valuable hands-on experience with Azure's language and speech services, as well as practical knowledge on how to integrate Azure OpenAI's powerful capabilities into their apps to create intelligent, conversational user experiences.

Day 4: 12th Dec 2024

The fourth day of the training program began with a session on **Utilizing Prompt Engineering in Your App**. In this segment, participants learned about the concept of **prompt engineering**, which is the art and science of crafting effective prompts to get the desired responses from AI models, particularly those from **Azure OpenAI**. The focus was on designing prompts that can help guide the AI to provide accurate, contextually relevant, and useful outputs. Participants explored how to fine-tune their prompts for various tasks, such as question-answering, content generation, summarization, and more. They also experimented with using different prompt structures and techniques to improve the AI's performance in specific scenarios, learning how small adjustments in wording can lead to significantly better results.

Following that, the training covered **Using Your Own Data with Azure OpenAI**. This session emphasized how to leverage custom datasets to enhance the capabilities of the **Azure OpenAI models**. Participants learned how to fine-tune pre-trained models with their own data, allowing them to tailor the AI to their specific use cases and business requirements. The session covered best practices for data preparation, training, and integration, enabling participants to create more personalized and relevant AI-powered applications. They were shown how to upload and manage data in the Azure environment, and how to use that data to further improve model accuracy and performance for tasks like classification, generation, and summarization.

By the end of the day, participants had a solid understanding of how to work with **Azure OpenAI's advanced features**. They gained the skills to effectively craft prompts for their applications, as well as how to integrate their own data to fine-tune the models and make them more customized to their specific needs. This hands-on experience set them up for building more intelligent, data-driven applications in the real world.

Day 5: 13th Dec 2024

The fifth day of the training program commenced with a session on **Creating a Custom Skill for Azure AI Search**. In this segment, participants learned how to extend the capabilities of **Azure Cognitive Search** by developing and integrating custom skills. Azure AI Search allows users to enrich their search experiences with AI-powered content understanding, and custom skills let them tailor the search process to specific business needs. Participants were introduced to the concept of AI enrichment pipelines, where they could create custom processing steps to extract valuable information from unstructured data, such as documents or images. They gained hands-on experience in building and integrating these custom skills to enhance search relevance, improve result ranking, and automate complex data extraction workflows.

The next topic of the day was **Extracting Data from Forms** using Azure's **Form Recognizer** service. This session focused on how to automate data extraction from structured and semi-structured forms, such as invoices, receipts, surveys, and contracts. Participants learned how to use the pre-built models in **Form Recognizer** to quickly extract key fields like dates, amounts, and names from documents. They also explored how to train custom models to handle more specialized or complex form layouts. The session covered the process of scanning, analyzing, and structuring the data to be used for further processing, reducing the manual effort of data entry and improving efficiency in document-based workflows.

By the end of the day, participants had practical experience in **creating custom skills** for AI-powered search applications and **extracting structured data** from various types of forms. These skills are crucial for automating document management tasks, improving search functionalities, and integrating AI-

driven insights into business workflows. Participants were now equipped with the knowledge to build advanced search solutions and automate document processing in their own applications.

Day 6: 14th Dec 2024

The sixth day of the training program commenced with a session on **Real-Time Applications of AI Services**. This session aimed to demonstrate how the various AI services covered in the previous days could be applied to real-world scenarios, emphasizing their practical utility and impact across industries.

Throughout the day, participants engaged in hands-on labs where they got to implement real-time AI models and integrate them into applications. They experimented with using Azure's AI tools to build a simple real-time video analysis app, integrate speech-to-text for live transcription, and implement a personalized recommendation engine for e-commerce scenarios.

By the end of the day, participants had a deeper understanding of how to leverage **Azure AI services** to create dynamic, real-time applications that can respond to user input, process data in real time, and provide instant, actionable insights across various business domains.

In conclusion, The **Short-Term Training Program (STTP)** on **Microsoft Azure AI Engineer Associate** has been a comprehensive, hands-on journey into the world of Artificial Intelligence, focusing on the practical applications and tools available on the **Azure platform**. Over the course of the training, participants gained in-depth knowledge and experience in various AI-related technologies, which are becoming increasingly vital in modern business and technological landscapes. The program also highlighted the growing importance of cloud-based AI platforms like **Azure**, enabling businesses to scale and adapt to the rapidly changing technological landscape. Whether it's **improving customer experiences**, **automating workflows**, or **enhancing decision-making processes**, the ability to effectively integrate AI into applications has become a valuable skill in today's digital economy.

We encourage all participants to continue building on the foundation laid during this program and explore further opportunities for learning and growth in the field of AI.

Photos:


MICROSOFT AZURE AI ENGINEER ASSOCIATE
GPS Map Camera
VIVA INSTITUTE OF TECHNOLOGY, shrigaon Kumbharpada Virar East Maharashtra, India
Shirgaon, Veer Sawarkar road, Virar(East), Tal-Vasai, FVF5+G7X, Chandansar, Kumbharpada ,Virar Maharashtra 401303, India
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