

AI for Beginners Day 3

Meeting Summary & Action Items

Program Introduction

Overview

Day 3 of the **AI for Beginners** program focused on **Azure AI ecosystem, Machine Learning platforms, and Generative AI services**, providing a comprehensive understanding of how Microsoft enables **enterprise-grade AI solutions**.

The session covered **Azure Cognitive Services, Azure Machine Learning, Azure OpenAI, and Azure Bot Services**, along with practical concepts such as **prompt engineering, API integration, token-based pricing, and responsible AI practices**. Learners also explored **Azure AI Studio** for building and deploying AI applications efficiently.

Session Highlights

- Overview of Azure AI ecosystem and service categories
 - Deep dive into Cognitive Services (Vision, Speech, NLP, Decision AI)
 - Azure Machine Learning lifecycle and AutoML capabilities
 - Generative AI using Azure OpenAI (GPT, DALL·E, Whisper)
 - Azure AI Studio for building AI applications
 - Prompt engineering techniques for improved accuracy
 - REST API integration and authentication methods
 - Token-based pricing and cost optimization
 - Security, compliance, and Responsible AI principles
 - Azure AI certification roadmap
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Key Concepts Covered

1. Azure AI Ecosystem Overview

Azure provides four major AI service categories:

- **Cognitive Services** → Prebuilt AI APIs
- **Azure Machine Learning** → End-to-end ML platform
- **Azure OpenAI Service** → Generative AI models
- **Azure Bot Services** → Conversational AI

Key Benefit:

No need to build AI models from scratch—use managed services.

2. Azure Cognitive Services

Prebuilt APIs for adding intelligence into applications.

Capabilities:

- **Computer Vision**
 - Object detection
 - OCR
 - Face recognition
 - **Speech Services**
 - Speech-to-text
 - Text-to-speech
 - **Language Services**
 - Sentiment analysis
 - Translation
 - Summarization
 - **Decision Services**
 - Anomaly detection
 - Content moderation
 - Personalization
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3. Azure Machine Learning (Azure ML)

Supports complete ML lifecycle:

- Data preparation
- Model training
- Experiment tracking
- Deployment

Key Features:

- **AutoML** → Automatically selects best algorithm
- **ML Designer** → Drag-and-drop pipeline builder

- Supports Python, notebooks, GPU clusters
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4. Azure OpenAI & Generative AI

Provides access to powerful models:

- **GPT models** → Text generation
- **DALL·E** → Image generation
- **Whisper** → Speech recognition
- **Embeddings** → Semantic search

Enterprise Advantage:

- Data privacy
 - Secure environment
 - Compliance support
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5. Azure AI Studio

Web-based platform to:

- Explore models
- Design AI workflows
- Build and deploy applications

Key Features:

- Model catalog
 - Prompt flow builder
 - Integration with RAG architecture
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6. Retrieval-Augmented Generation (RAG)

Enhances AI accuracy by combining:

- External documents
- AI model reasoning

Benefit:

- Reduces hallucinations
- Improves enterprise reliability

7. API Integration & Development

- AI models accessed via **REST APIs**
 - Authentication methods:
 - API Keys
 - Microsoft Entra ID
 - Requires deployment of model endpoints before usage
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8. Prompt Engineering Techniques

- **Zero-shot prompting** → No examples
- **Few-shot prompting** → Uses examples
- **Role prompting** → Assigns persona

System Messages:

- Define AI behavior and response style
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9. Pricing & Cost Management

- Token-based pricing:
 - Input tokens
 - Output tokens
 - Advanced models (e.g., GPT-4) cost more than smaller models
 - Quotas control:
 - Tokens per minute
 - Request limits
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10. Security & Responsible AI

- Customer data not used for model training
- Regional data residency support
- Content filtering for harmful outputs

Responsible AI Principles:

- Fairness
- Transparency
- Reliability

- Privacy
 - Accountability
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11. Microsoft Foundry Platform

- Unified platform for:
 - Designing
 - Building
 - Testing
 - Deploying AI applications
 - Uses serverless architecture for scalability
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12. Certification Pathways

- **AI-900** → Azure AI Fundamentals (Beginner)
 - **AI-102** → Azure AI Engineer Associate (Intermediate)
 - **DP-100** → Azure Data Scientist Associate (Advanced)
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Best Practices Highlighted

- Use Cognitive Services for quick AI integration
 - Apply AutoML for faster model development
 - Use RAG for enterprise AI applications
 - Optimize token usage to control costs
 - Follow Responsible AI and security guidelines
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Action Items for Learners

Material Shared by the Trainer: [CLICK HERE](#)

Quiz: To be uploaded