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AIML B1

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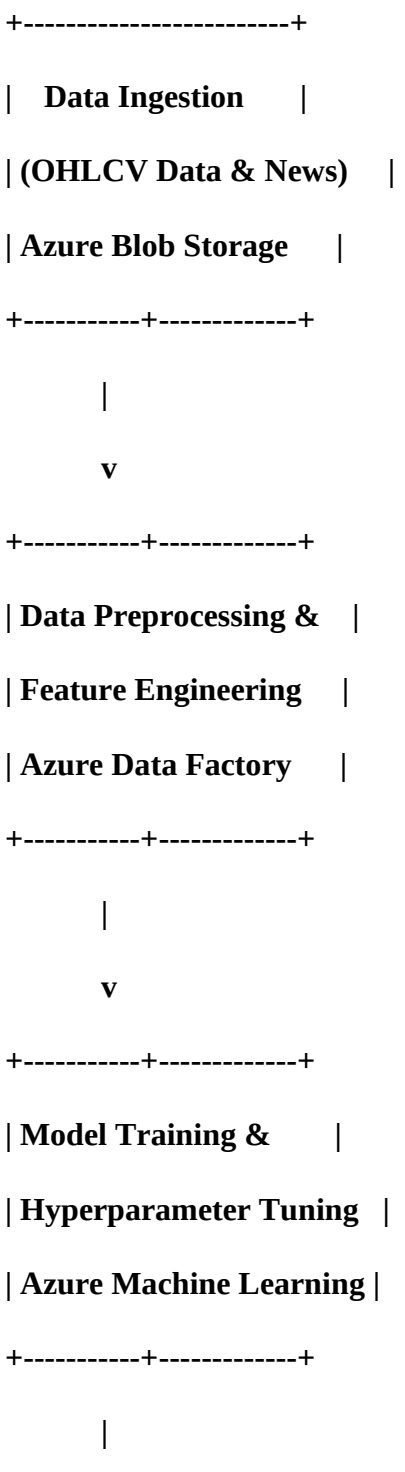
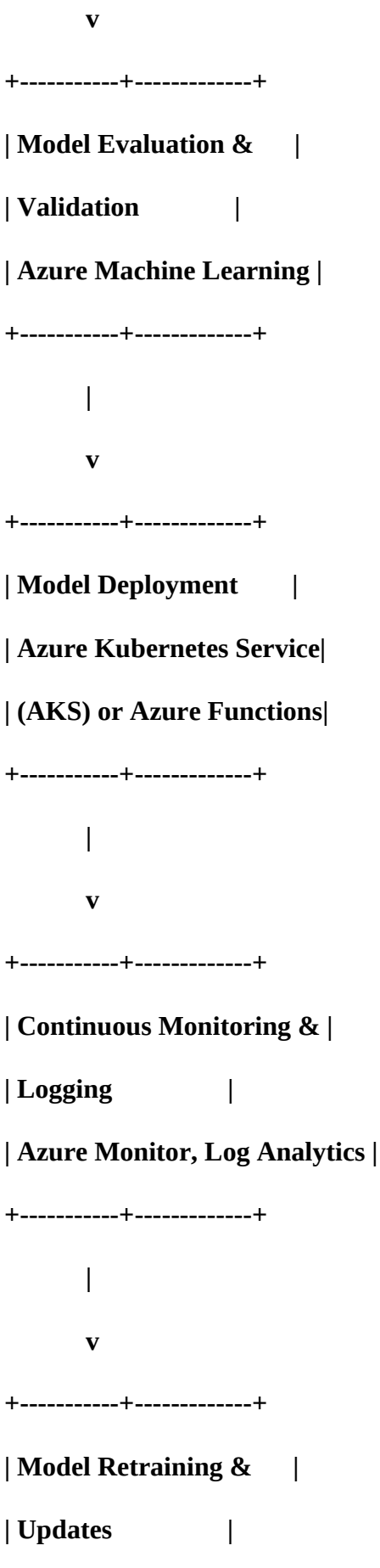
MLOPS ASSIGNMENT 2

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| Model Evaluation & |
| Validation |
| Azure Machine Learning |
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| Model Deployment |
| Azure Kubernetes Service|
| (AKS) or Azure Functions|
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| Continuous Monitoring & |
| Logging |
| Azure Monitor, Log Analytics |
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| Model Retraining & |
| Updates |

| Azure Machine Learning |

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| Version Control & CI/CD |

| Azure DevOps |

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Detailed Steps:

1. **Data Ingestion:**
   - **Source**: Financial OHLCV data and news headlines.
   - **Tool**: Azure Blob Storage.
   - **Description**: Data is ingested and stored in Azure Blob Storage for easy access and scalability.
2. **Data Preprocessing & Feature Engineering:**
   - **Source**: Raw data from Blob Storage.
   - **Tool**: Azure Data Factory.
   - **Description**: Perform data cleaning, transformation, and feature engineering using Azure Data Factory pipelines.
3. **Model Training & Hyperparameter Tuning:**
   - **Source**: Preprocessed data.
   - **Tool**: Azure Machine Learning.
   - **Description**: Train models and tune hyperparameters using Azure Machine Learning's compute resources and automated machine learning features.
4. **Model Evaluation & Validation:**
   - **Source**: Trained models.
   - **Tool**: Azure Machine Learning.
   - **Description**: Evaluate model performance using validation datasets and metrics available in Azure Machine Learning.
5. **Model Deployment:**
   - **Source**: Evaluated models.
   - **Tool**: Azure Kubernetes Service (AKS) or Azure Functions.
   - **Description**: Deploy the model for real-time or batch predictions using AKS for scalable deployments or Azure Functions for serverless deployments.
6. **Continuous Monitoring & Logging:**
   - **Source**: Deployed models.
   - **Tool**: Azure Monitor, Azure Log Analytics.
   - **Description**: Monitor model performance and system health, and log predictions and system activities for analysis and troubleshooting.
7. **Model Retraining & Updates:**
   - **Source**: New data and performance metrics.

    - **Tool**: Azure Machine Learning.
    - **Description**: Use new data and performance feedback to retrain and update the model periodically.
8. **Version Control & CI/CD:**
    - **Source**: Code and model artifacts.
    - **Tool**: Azure DevOps.
    - **Description**: Implement version control and continuous integration/continuous deployment pipelines using Azure DevOps for automated testing and deployment of code and models.