

## AI Capstone: Milestone 3 Check-in (Week 9)

**Focus:** Demonstrating the core machine learning model(s) or AI components, showing integration into the target application (API, dashboard), and initial steps towards deployment.

### Requirements & Discussion Points:

Students should be prepared to discuss and demonstrate:

#### 1. Core Model(s) / AI Component:

- **Demonstrate the trained core model(s).** Discuss the architecture, training process, and key hyperparameters.
- Present evaluation results (metrics, plots). How well does the model perform on the defined task? Discuss limitations.
- Show code related to model training and evaluation.

#### 2. System Integration:

- **Demonstrate the model integrated into the application prototype.**
  - *API Project:* Show the API endpoint accepting input and returning model predictions/results.
  - *Dashboard Project:* Show the dashboard using model outputs to generate visualizations or insights.
  - *Pipeline Project:* Show the relevant pipeline step executing the model training/evaluation.
- Discuss challenges faced during integration.

#### 3. Initial Deployment Steps (If Applicable):

- Show the Dockerfile created for the application/service.
- Discuss the chosen cloud platform and deployment strategy (e.g., which services: Cloud Run, SageMaker, App Service, etc.).
- Describe any initial setup done on the cloud platform (even if deployment isn't fully working yet).

#### 4. Progress & Planning:

- Review progress against the plan set in Milestone 2.
- Detailed task breakdown for the *next 3 weeks* (leading to Milestone 4), focusing on end-to-end functionality, deployment, testing, and documentation.
- Identify key remaining challenges for completing the project.

## Marking Scheme (Informal Discussion-Based Assessment - Total 25 points)

- **1. Core Model Development & Evaluation (6 points):**
  - (0-2) Model is non-functional, poorly chosen, or evaluation is missing/flawed.
  - (3-4) Model works but performance is low or evaluation is basic; training process unclear.
  - (5-6) Appropriate model developed, training process clear, solid evaluation presented with relevant metrics and discussion of limitations.
- **2. System Integration Demonstration (6 points):**
  - (0-2) Integration attempt failed or not demonstrated.
  - (3-4) Basic integration shown but buggy or limited; demonstration struggles.
  - (5-6) Clear demonstration of the model integrated and functioning within the application context (API response, dashboard visualization, pipeline step execution).
- **3. Deployment Preparation (Dockerfile & Plan) (5 points):**
  - (0-1) No Dockerfile or deployment plan discussed.
  - (2-3) Basic Dockerfile exists OR deployment plan is vague; minimal cloud setup.
  - (4-5) Functional Dockerfile demonstrated; clear deployment strategy and choice of cloud services discussed; initial cloud setup may be shown.
- **4. Progress & Forward Planning (4 points):**
  - (0-1) Significant delays; plan for completion is unclear or unrealistic.
  - (2) Reasonable progress; basic plan for next 3 weeks outlined.
  - (3-4) Good progress aligned with previous plan; detailed, achievable plan for Milestone 4 presented, including testing and documentation.
- **5. Problem Solving & Technical Depth (4 points):**
  - (0-1) Unable to discuss technical challenges or solutions coherently.
  - (2) Can discuss technical aspects at a surface level; some problem-solving evident.
  - (3-4) Demonstrates clear understanding of technical details, discusses challenges and solutions effectively; shows technical depth.

**Feedback:** Verbal feedback will concentrate on the model's effectiveness, the success of the integration, the feasibility of the deployment plan, and the critical path to project completion.