

# **MACHINE LEARNING MODEL DEPLOYMENT WITH IBM CLOUD**

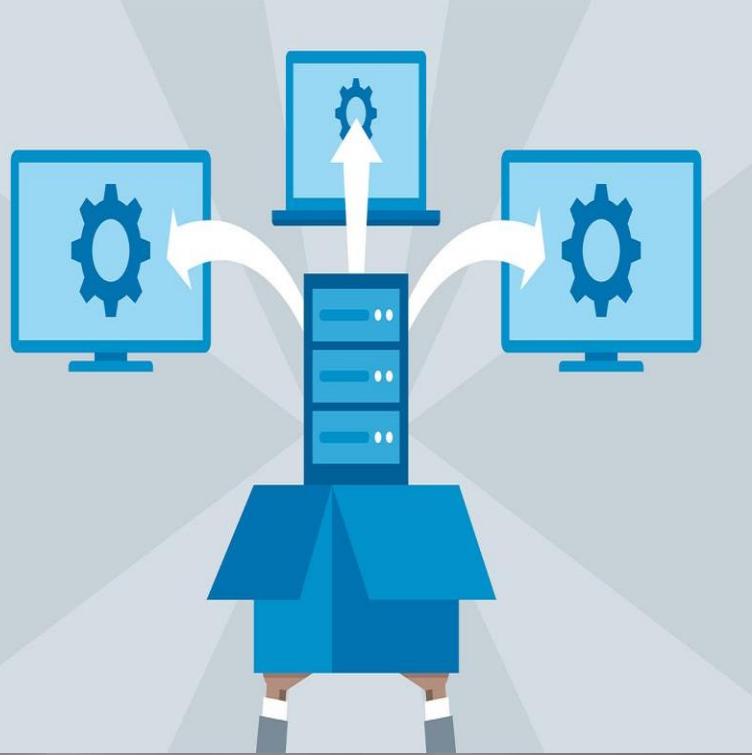
---

**P.S.Dhanusri  
S.Dhivya  
S.Arun  
A.Dhanush  
M.Vijitha  
S.Haripriya**

---

# PROBLEM DEFINITION

“The problem is to efficiently and effectively deploy a predictive machine learning model to address a specific business or user need.



- ➡ This deployment should encompass all stages of the machine learning lifecycle, including data preparation, model training, deployment, and ongoing monitoring.
- ➡ The challenge is to ensure that the deployed model delivers accurate predictions in real-time, scales to meet varying workloads, and complies with relevant regulatory and security standards while maximizing the value it provides to the organization.”

# Design Thinking Approach

## Empathize

### Understand Stakeholder Needs:

Conduct interviews and workshops with stakeholders, including data scientists, developers, business users, and IT professionals. Use empathy techniques to deeply understand their challenges, and goals related to model deployment with IBM Cloud Watson Studio. Gather feedback on their experiences and identify specific issues they face.

## Define

### Refine the Problem:

Based on the insights gathered, refine and narrow down the problem definition. Create a clear and concise problem statement that reflects the most pressing deployment challenges from a user perspective.

# Ideate

## Generate Creative Solutions:

Organize brainstorming sessions with cross-functional teams to generate innovative deployment solutions. Encourage diverse perspectives to foster creativity. Explore ideas for addressing scalability, security, monitoring, user acceptance, and other challenges.

# Prototype

## Build Deployment Prototypes:

Create prototypes or mockups of potential deployment solutions within IBM Cloud Watson Studio. Develop interactive prototypes that allow stakeholders to visualize and interact with the deployment process. Use prototyping to iterate rapidly and gather early feedback from users.

# Test

## Gather Feedback and Iterate:

Test the deployment prototypes with end-users and stakeholders to collect feedback. Iterate on the prototypes based on the feedback received, making necessary adjustments and improvements. Continue testing and refining until the solution meets user needs and expectations.

# Deployment Strategy

## Select and Implement:

Based on the validated prototype, select the most suitable deployment strategy within IBM Cloud Watson Studio. Develop a clear deployment plan, specifying how to scale, monitor, and integrate the model effectively. Consider the identified security and compliance requirements in the deployment strategy.

## Monitor and Maintain

### Establish Ongoing Processes:

Implement robust monitoring and maintenance processes for the deployed model. Set up alerts and triggers to detect issues, such as model drift or performance degradation, proactively. Establish a clear plan for regular updates and model versioning.

## Integration

### Seamlessly Integrate with Existing Systems:

Work closely with IT professionals to ensure smooth integration of the deployed model with existing systems and applications. Use APIs and connectors provided by IBM Cloud Watson Studio to facilitate integration. Test integration thoroughly to verify data flow and compatibility.

# Cost Management

## Optimize Resource Usage:

Continuously monitor resource utilization to optimize costs. Implement cost-saving strategies such as auto-scaling based on traffic patterns. Periodically review and adjust resource allocation to align with actual needs.

# User Acceptance

## Build Trust and Transparency:

Communicate the value of the deployed model to end-users and stakeholders. Provide clear explanations of how the model works, its predictions, and its limitations. Gather user feedback and make adjustments to address concerns and improve trust.

**THANK YOU**