

Robert Gray III

Aspirations of Machine Learning

New Era New Technology



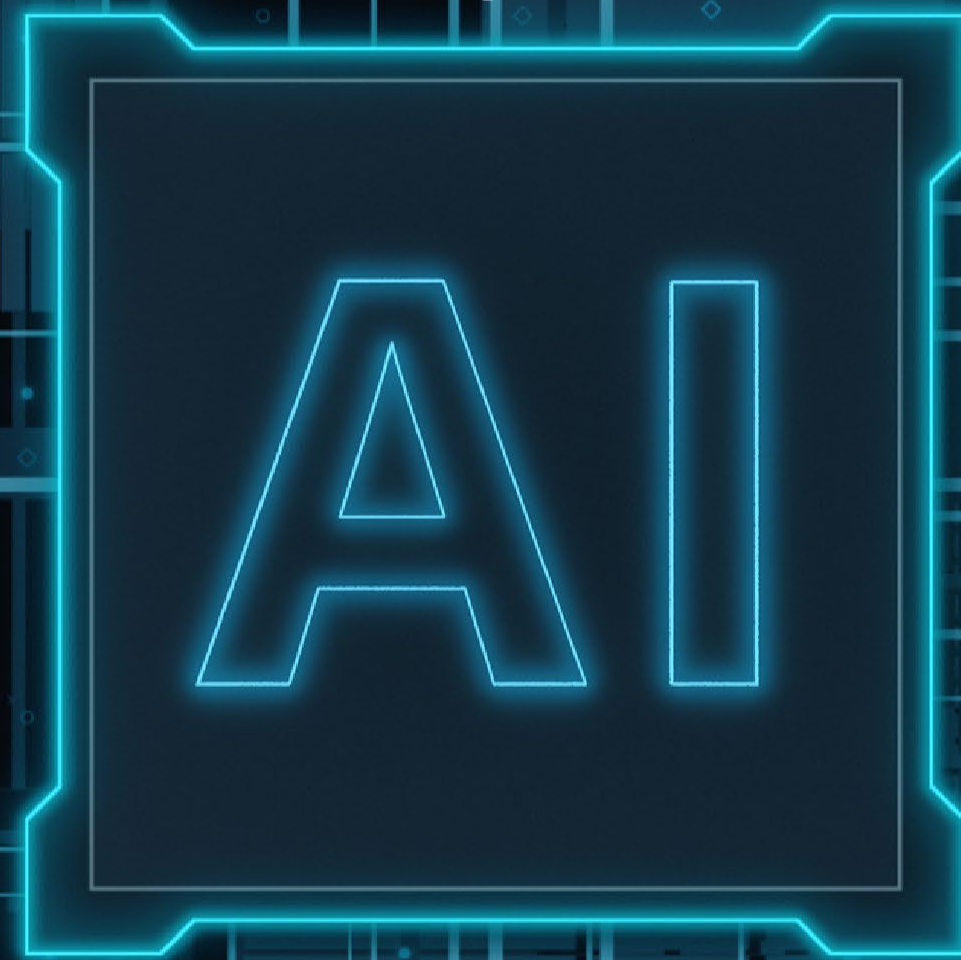
Agenda



- **Introduction to machine learning**
- **Importance of strategy**
- **Identify problem & technique**
- **Data acquisition & preparation**
- **Choose right model**
- **Hyperparameter tuning**
- **Train & test model**
- **Model deployment & monitoring**
- **Conclusion & summary**

Intro to ML 101

Machine learning is a subset of artificial intelligence that allows systems to automatically learn and improve from experience without being explicitly programmed. In other words, machine learning enables systems to learn from data and make predictions or decisions based on that learning.



However, implementing machine learning methods can be a complex and daunting task. Therefore, it is essential to have a comprehensive strategy in place to ensure successful implementation.

Role of strategy

Understand the problem

Criteria for Machine Learning Usecase:

- 1. Large Dataset**
- 2. Pattern Recognition or Predictive Modeling**
- 3. Cannot be solved through traditional Programming**

Start Small

Identify Problem & Technique with Culture

Explain the why - A compelling story to drive the urgency of change

Enhancement over Diminishment

Ingrate siloed contributions into interdisciplinary collaborations

Data Acquisition & Preparation



Data is a critical component of machine learning. High-quality, relevant data is required to train machine learning models.

An organization needs to collect and prepare data that is suitable for the problem they are trying to solve. This includes cleaning and organizing the data to ensure that it is usable.



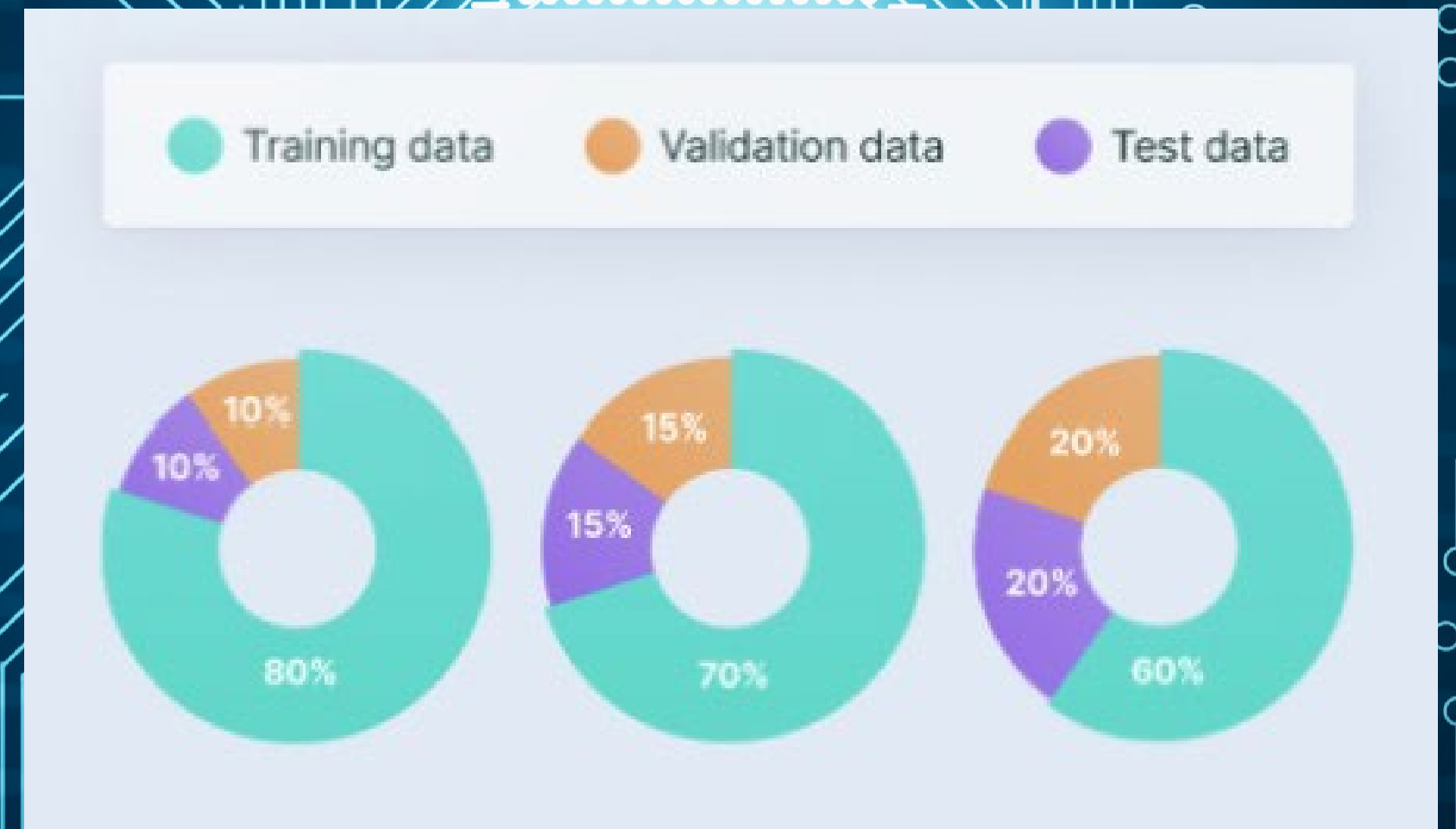
Hyperparameter Tuning

Hyperparameters are parameters that are not learned from data but are set by the user.

**Model optimization
Underfitting, overfitting,
noise cancellation.**

Train & Test Model

- **Linear regression.**
- **Logistic regression.**
- **Decision tree.**
- **SVM algorithm.**
- **Naive Bayes algorithm.**
- **KNN algorithm.**
- **K-means.**
- **Random forest algorithm.**



Model Deployment & Monitoring

The background of the slide is a dark blue field filled with intricate white and light blue circuit board traces. In the center-right, a glowing, semi-transparent digital chip is depicted, composed of a grid of small white dots. A human hand, wearing a white shirt cuff, is shown from the bottom right, with the index finger pointing directly at the glowing chip. The overall aesthetic is futuristic and technological.

Real World Scenarios

Monitor the model

**Compare and contrast with
most effective traditional
means**



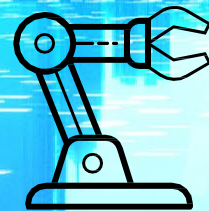
In conclusion, implementing machine learning methods can be a complex process, but by following these six strategies

- understanding the problem, data acquisition and preparation, choosing the right machine learning model, hyperparameter tuning, training and testing the model, and model deployment

- an organization can ensure a successful implementation. Machine learning has the potential to transform industries and provide businesses with a competitive advantage. It is crucial to have a comprehensive strategy in place to reap the full benefits of this technology.

Conclusion

Thank You!



Robert Gray III