

# Introduction to Machine Learning

## Day - 1

- Aim of these lectures
- Understanding terminology in ML

---

# The Final Goal

Solving a Differential Equation using ML

# Break down the goal into tasks

- Understand terminology in ML
- Mathematical foundation of ML
  - Mathematical Definitions
  - Universal Approximation Theorem
- Mathematical Model of Artificial Neural Network(ANN)
  - Feed Forward
  - Backward Propagation
  - Activation and loss functions
- Implement algorithm for ANN in python
- **Problem-1:** Binary Classifier
- Introduction to python packages
- **Problem-2:** Digit Recognition
- **Problem-3:** Solving a Differential Equation

# Understanding terminology in ML

- Dataset
- Feature
- Labeled data
- Model
- Learning
- Training
- Machine Learning
- Supervised Learning
- Unsupervised Learning
- Algorithm
- Neural Network

# Understanding terminology in ML

- Layers
- Input Layer
- Output Layer
- Hidden Layer
- Deep Learning
- Affine functions
- Network input
- Network weights
- Network output
- Bias

Thank you