

The Three Learning Paradigms

container

Data X (features) + Y (labels)
Image -> "Cat" Email -> "Spam" House -> \$500K

Supervised Learning

Tasks

- Classification
- Regression
- Detection
- Segmentation

Data X only (no labels!)
Just images Just customer data Just documents

Unsupervised Learning

Tasks

- Clustering
- Dim. Reduction
- Anomaly Detection
- Association

Data X creates Y from itself
"The cat sat" -> "on" Mask word -> Predict Next frame -> Predict

Self-Supervised

Tasks

- Next Token (GPT)
- Masked LM (BERT)
- Contrastive (CLIP)
- Autoencoders