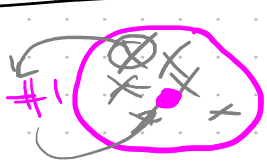
Machine Learning

$D = \{d_n\}_{n=1}^{N}$







Reinforcement learning

Supervised learning

$P(y|\bar{x})$

$D = \{(\bar{x}_n, y_n)\}_{n=1}^{N}$

$f : \bar{x} \mapsto y$

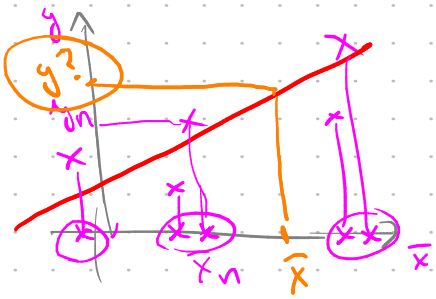
$\bar{x}$ — [ ] — y

Unsupervised learning

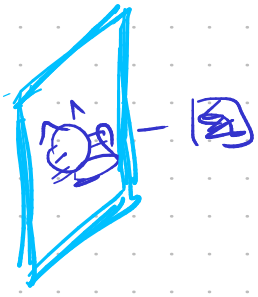
$p(\bar{x})$

$D = \{\bar{x}_n\}_{n=1}^{N}$

Regression $y \in \mathbb{R}$



Classification $y \in \{C_1, C_2, \dots, C_K\}$



$\bar{x} \in \mathbb{R}^{3 \cdot 10^6}$

1 Mpix

$3 \cdot 10^6$

$\mathbb{R}$

dimensionality reduction

$\bar{z} \in \mathbb{R}^{500}$

$z \in \mathbb{R}^{0}$

parametrization

