

PSP: ↓, ↓ 70%

Assignment:

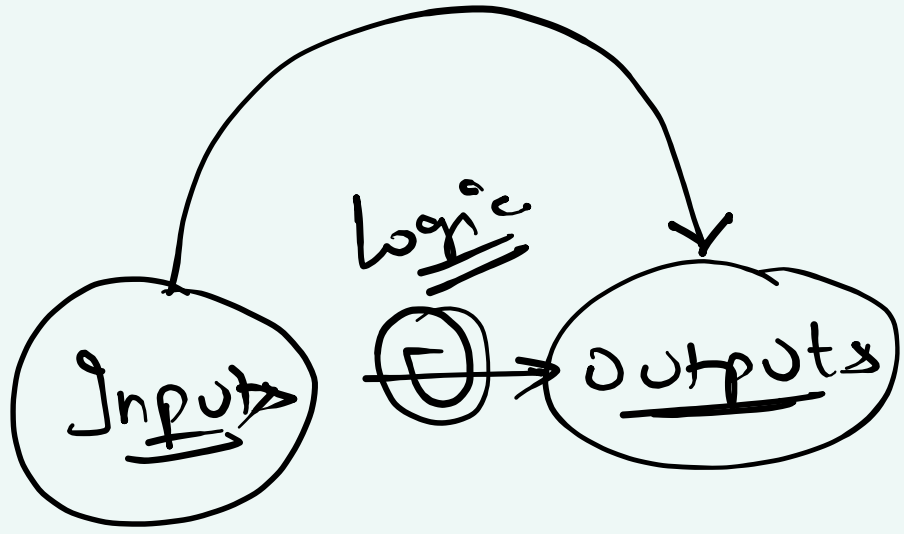
→ Extra Numpy Question

# Vectorization ✓

1D 2D

3D

$$\begin{bmatrix} 1 & 2 & 3 \\ 4 & 5 & 6 \\ 7 & 8 & 9 \end{bmatrix} + \begin{bmatrix} 0 & 0 & 0 \\ 1 & 1 & 1 \\ 1 & 1 & 1 \end{bmatrix}$$



Remove odd No  
 $(n \times n)$

List  
LinkedList

Numpy  
array size is fixed

Q-ids

1. 17333

→ 2. 21682

3. 14602 ✓

4. 19927 ✓

5. 14602 ✓

6. 15931 ✓

19873 ✓

14573 ✓

19079 ✗

19044 ✓

15992 ✓

19039 ✓

19847 ✓

19038 ✓

19804 ✓

$$A = [1 \ 0 \ 0 \ 0 \ 1 \ 0 \ 0 \ 1 \ 0 \ 0 \ 1 \ 0]$$

$$\begin{aligned} \rightarrow 0 &: 9 & P(0) &= \frac{9}{14} \\ \rightarrow 1 &: 5 & P(1) &= \frac{5}{14} \end{aligned}$$

total  $\Rightarrow 14$

Entropy

$$E(A) = - \sum_x p(x) \cdot \log(p(x))$$

$$p(0) \cdot \log p(0) + p(1) \cdot \log p(1)$$

$$\frac{9}{14} \log \frac{9}{14} + \frac{5}{14} \log \frac{5}{14}$$

$$A = [2, 2, 1, 2, 0, 0, 1, 1, 2, 2, 1, 0]_{12}$$

$$\begin{aligned} \rightarrow 0 &: 3 & P(0) &\Rightarrow 3/12 \\ \rightarrow 1 &: 4 & P(1) &\Rightarrow 4/12 \\ \rightarrow 2 &: 5 & P(2) &\Rightarrow 5/12 \end{aligned}$$

$$E(A) = - \sum_{x=0,1,2} p(x) \cdot \log p(x)$$

$$p(0) \times \log(0) + p(1) \times \log(p(1)) + p(2) \times \log(p(2))$$

$$\Rightarrow \left[ \frac{3}{12} \times \log\left(\frac{3}{12}\right) + \frac{4}{12} \log\left(\frac{4}{12}\right) + \frac{5}{12} \log\left(\frac{5}{12}\right) \right]$$

$$f(x) = \frac{1}{1 + e^{-x}}$$

$$f(0) \Rightarrow 0.5$$

$$f(20) \Rightarrow 0.9999999$$

$$(3, 5) + (3, 1) \rightarrow (3, 5)$$

$$\begin{bmatrix} 1 & 0 & 1 & 0 & 2 \\ 1 & 0 & 2 & 1 & 1 \\ 1 & 1 & 1 & 2 & 2 \end{bmatrix}_{(3 \times 5)} + \begin{bmatrix} 2 & 2 & 2 & 2 & 2 \\ 2 & 2 & 2 & 2 & 2 \\ 2 & 2 & 2 & 2 & 2 \end{bmatrix}_{(3 \times 5)} \rightarrow (3, 5)$$

Review DSML

Common Core

Python

DS Libraries

Numpy, Pandas

Matplotlib, Seaborn

Sklearn

Prob & Stats (14 lectures)

Real Data Science

EDA

Feature Engineering

Maths & ML (10 lecture + 12)

LA, Coordinated, Calculus

Optimization

SQL (7 lectures)

XTabular (4 lectures)

ML (3 months)

Supervised

Linear R

Log R

KNN

DT / RF / XG Boost

Ensemble

Unsupervised

K-Means, DBSCAN, Hier clustering

Recommender Sys

Time series forecasting (Demand forecasting)

DL

NN (6 lectures)

CNN (CV 12-13)

NLP (13-14 lecture)

R L X

MLops / DE

ML Design