

There are multiple ways to reach solution. Fastest one is to complete phase1 and then unscramble the word. Slowest one is to complete phase1 and 2 (in no particular order) and combine them to find solution.

Phase-1

Decipher character in the nodes based using Caesar (Ref: Julius Caesar) cipher using primes (Ref: Optimus Prime) $n=7$ and $n=11$ alternatively. (Ref: Large pirows = pi arrows = $\pi = 22/7 = 2*11/7 \rightarrow$ taking largest prime from both sides numerator and denominator). Now, deciphering requires trial and error because of alternate ordering as shown below. However, one might find pattern that it is alternating but only if they knew the direction which gets revealed in phase 2 only.

- $W \rightarrow [W + 7] \bmod 26 = [23 + 7] \bmod 26 = 30 \bmod 26 = 4 \rightarrow D$
- $T \rightarrow [T + 11] \bmod 26 = [20 + 11] \bmod 26 = 31 \bmod 26 = 5 \rightarrow E$
- $X \rightarrow [X + 7] \bmod 26 = [24 + 7] \bmod 26 = 31 \bmod 26 = 5 \rightarrow E$
- $E \rightarrow [E + 11] \bmod 26 = [5 + 11] \bmod 26 = 16 \bmod 26 = 16 \rightarrow P$
- $F \rightarrow [F + 7] \bmod 26 = [6 + 7] \bmod 26 = 13 \bmod 26 = 13 \rightarrow M$
- $X \rightarrow [X + 11] \bmod 26 = [24 + 11] \bmod 26 = 35 \bmod 26 = 9 \rightarrow I$
- $G \rightarrow [G + 7] \bmod 26 = [7 + 7] \bmod 26 = 14 \bmod 26 = 14 \rightarrow N$
- $S \rightarrow [S + 11] \bmod 26 = [19 + 11] \bmod 26 = 30 \bmod 26 = 4 \rightarrow D$

Once they uncover all the characters, they can find the word DEEPMIND by rearranging characters or following up a particular node order that was resolved using alternate key of $n=7$ and $n=11$. Google reference is given by coloring nodes with Google logo's palette.

Phase-2

If someone solves phase1 and still stuck, they can solve Phase2 to find topological ordering (Ref: topography) of given graph. Given graph is undirected cyclic graph and it needs to be converted to DAG (directed acyclic graph) by giving direction to the edges.

Use Caesar cipher with $n=2$ just because we are finding something between TWO things (nodes). Direction is left node to right node if direction from first vowel to first consonant is left to right in decrypted text and vice versa. Guessing of 2 is also easy because online tools are available to decrypt Caser cipher for possible n (0-25).

- $TW = Tgkphqt egogpv Ngctpkpi = \text{Reinforcement Learning} = \leftarrow$
- $XW = Rcvvgtp Tgeqipkvkqp = \text{Pattern Recognition} = \leftarrow$
- $EW = Pcvwtcn Ncpiwci g Rtqeguukpi = \text{Natural Language Processing} = \leftarrow$

- FW = Eqorwvgt Xkukqp = Computer Vision = ←
- TX = Wpuwrgtxkugf Ngctpkpi = Unsupervised Learning →
- EX = Eqpewttgpn Pgwtcn Pgvyqtmu = Concurrent Neural Networks ←
- EF = Qdlgev Tgeqipkvkqp = Object Recognition →
- ST = Urggej Tgeqipkvkqp = Speech Recognition ←
- SX = Fcvc Okpkpi = Data Mining ←
- EX = Ctvkhkekcn Kpvgnnkigpeg = Artificial Intelligence →
- FX = Kpvgnnkigpv eqpvtqn = Intelligent control →
- GS = Tgewttgpn Pgwtcn Pgvyqtmu = Recurrent Neural Networks ←
- GX = Qrvkecn Ejctcevg Tgeqipkvkqp = Optical Character Recognition →

Now, if you find topological ordering using standard algorithm, you can find it as $W \rightarrow T \rightarrow X \rightarrow E \rightarrow F \rightarrow X \rightarrow G \rightarrow S$ which is the ordering of the decrypted word → DEEPMIND

Fun fact: There are 13 edges in the graph and nodes have colors from Google official logo's palette. It also has Google's (now dead) +1 logo to indicate $13+1 = 14$. Deepmind which has become famous in AI history for its alphaGo system, was acquired by Google in 2014.

