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23CP307P-Artificial Intelligence Lab

Exp. No.	Experiment Title	Date	Signature																		
1	WAP to implement DFS and BFS for traversing a graph from source node (S) to goal node (G), where source node and goal node is given by the user as an input.	10-01-24																			
2	Design water jug problem solver. You are given two jugs with m litres and a n litre capacity. Both the jugs are initially empty. The jugs don't have markings to allow measuring smaller quantities. You have to use the jugs to measure d litres of water where d is less than n. You are given two jugs with m litres and a n litre capacity. Both the jugs are initially empty. The jugs don't have markings to allow measuring smaller quantities. You have to use the jugs to measure d litres of water where d is less than n.	17-01-24																			
3	Solve 8 puzzle problem using A* algorithm where initial state and Goal state will be given by the users.	24-01-24																			
4	Implement using C/C++, the Fixed Increment Perceptron Learning algorithm as presented in the attachment. The training set for a 2-classificaiton problem is also attached. Iterate the perceptron through the training set and obtain the weights.	31-01-24																			
5	Given a C++ code bnp, identify the algorithm implemented through the code. Also document the code.	07-02-24																			
6a	Understand the project available on following link Project Link: https://github.com/aharley/nn_vis Project by: https://adamharley.com/ Reference in case needed: https://www.youtube.com/watch?v=pj9-rrlwDhM	14-02-24																			
6b	Part 2 Populate the table below to summarize your understanding of the project mentioned in part 1 <table><tr><th>Layer</th><th>Task</th><th>Rationale</th></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr><tr><td></td><td></td><td></td></tr></table>	Layer	Task	Rationale																21-02-24	
Layer	Task	Rationale																			
How does the following hyper-parameters affect network performance?																					
Hyper-Parameter	One Line Definition	Effect on the CNN																			
Stride																					
Dilation Rate																					
Type of pooling layer																					
Kernel size																					
padding																					

	<p>References:</p> <p>An Intuitive Explanation of Convolutional Neural Networks – the data science blog (ujjwalkarn.me)</p> <p>Gentle Dive into Math Behind Convolutional Neural Networks by Piotr Skalski Towards Data Science</p> <p>Intuitively Understanding Convolutions for Deep Learning by Irhum Shafkat Towards Data Science</p> <p>An Introduction to different Types of Convolutions in Deep Learning by Paul-Louis Pröve Towards Data Science</p>		
7	<p>Prepare your version of CNN following the steps in the link shared here.</p> <p>https://towardsdatascience.com/build-your-own-convolution-neural-network-in-5-mins-4217c2cf964f</p>	06-03-24	
8	<p>Design the Neural Network model for the project title submitted by you. Demonstrate "Over-fitting" and solve the same using "Dropout technique".</p> <p>Rubrics: Model Justification with respect to project domain - 5 marks Demonstration of over fitting and dropout technique - 5 marks</p>	13-03-24	
9	<p>For your project definition demonstrate applicable task out of prediction and classification.</p> <p>Explain the entire work flow of your project through a single diagram</p>	20-03-24	
10	<p>For your project demonstrate the following:</p> <ul style="list-style-type: none"> • need of optimizer - 5 marks • significance of your choice of optimizer - 5 marks • comparison of outcomes with and without optimization - 5 marks • Project Report including minimum (abstract, domain intro, data set description, implementation methodology with brief justification, results and discussion, future scope) - 10 marks 	27-03-24	
11a	Understanding the basics and IDE for Prolog Programming	03-04-24	
11b	<p>Implement any two of the following using Prolog:</p> <ul style="list-style-type: none"> - Medical diagnosis of common cold and flu using symptom inputs <p>Demonstrating list in prolog Monkey banana problem Find the factorial of a given number</p>	10-04-24	
12	WAP to design Tic Tac Toe games from O (Opponent) and X (Player) by using minimax algorithm.	24-04-24	