

Name: _____

Neptun: _____

Introduction to Machine Learning
Exam B
2023.12.18.

1. (10 points) What does the "Coffee Test" (designed to test Artificial General Intelligence) consist of?
2. (15 points) What is the unsupervised learning method? Draw a figure to introduce the mechanism of the method!
3. (15 points) What components affect the flight vector of a particle in a PSO algorithm?
4. (30 points) In a wrestling competition, wrestlers are divided into leagues based on their height and weight. Divide the competitors into two leagues ($k = 2$) based on the data obtained using the k-means algorithm. Perform the calculation over 2 iterations, taking the values of the 1st and 2nd competitors as the initial center points.

ID	height [cm]	weight [kg]
1	185	76
2	170	66
3	168	68
4	179	74
5	182	73
6	188	75

Table 1: Wrestlers' data

5. (15 points) What are the downsides of using a Q-learning method?
6. (15 points) In the Schelling model, what will agent A do, if its tolerance level is 55% and
a, Its color is RED
b, It is in the following neighborhood:

RED	BLUE	RED
BLUE	Agent A	BLUE
RED	BLUE	RED