



ARTIFICIAL NEURAL NETWORK MIDTERM HACKATHON

CSE 3228 & CSE 4119 CLASSES

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MidTerm-Hackathon EXAM RULES

1. Hackathon starts at 09:00 am and ends at 11:00 am. (Additional time may be added)
2. *You have to bring your laptop with you (python should be ready). If you have no laptop, you can use our department's lab (but you have to prepare the computer ready for Hackathon) If you have live any trouble, you have to solve it in your time slot.*
(Alternatively, You can also bring External USB with ready OS and Python installed)
3. This sheet shares Hackathon Questions which you must solve yourself.
(Team establishment is not allowed)
4. The Hackathon is divided in to two Sessions;
 Session 1: is going to be held in 5 December 2023-[09:00-11:00] (Today)
 In this Session 1, you are expected to develop the code from the first line to the last line. At the end of the Session 1, you have to submit your code on Teams platform.

 Session 2: is going to be held in 10 December 2023-[22:00 – 23:50] (Sunday)
 In this Session 2, you are expected to upload detailed Report in a two-columned paper format. In this report, you should explain the code developed in Session 1.
5. In Session 1, chatting with your classmates are not allowed.
6. In Session 1, **NO !!** Machine Learning/Deep Learning **LIBRARY USAGE** is allowed. You should develop Related Models (you have learned in our -M.Erdem's- ANN Course)
7. In Session 1, **UNKNOWN Methods** (that you have not learned in our -M.Erdem's- ANN Course) are **NOT !!** allowed
8. In Session 1, code exchange is not allowed. You should develop the code yourself.
9. In Session 1, Help from Internet search/Chat GPT usage/Automatic Code Generating tools are free to use. In other words, "your own search to solve your problem" is supported.
10. All answers must be coded by single student. Otherwise it is not accepted.
11. The completed codes should be uploaded on Teams Platform (Session 1).
12. The completed reports should be uploaded on Teams Platform (Session2).

DECEMBER 5, 2023

COMPUTER ENGINEERING DEPARTMENT
MANİSA CELAL BAYAR ÜNİVERSİTESİ

SESSION 1 – 5 December 2023
[%60 of MidTerm]

PROBLEM: Predict the foreign currency by using the other foreign currencies.

Code Phase 1 [30/100]:

- **You are supplied with “Doviz Satsirlari_20050101_20231205_Training_Set.xlsx” Dataset.**
- This data set contains 8 different foreign currencies records starting from 03.01.2005 to 28.11.2023.
- 7 of them marked as INPUT features to your model.
- 1 of them (the last one) marked as OUTPUT of your model.
- Write down the code for reading the Training Dataset (inputs and output).
- It should be possible to query i.th record of the inputs and related output (ex: print 4512.record on screen)

Code Phase 2 [40/100]:

- Write "Cost/Loss" function code
- Write "Derivative of Cost/Lost" function code
- Write "Optimizer" function code with the codes above
- Write your Model Code to solve the problem

Code Phase 3 [20/100]:

- Write Code needed for Preventing Overfitting using the Hybrid L2/L1 Penalty.

Code TEST Phase [10/100]:

- Write Code needed for taking 7 input currencies and give prediction of the output.
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SESSION 2 – 10 December 2023

Report Phase:

- Prepare Report in a two-column academic paper (take reference format from IEEE Transaction Journals)
- Report should include; Intro to Problem, Methodology, Discussion about problem (alternatives ?, corrections ? etc.), Conclusion with future advises

Table: Indicating the Course's Learning Outcomes and Learning Outcomes Components Relations with Questions

CSE 3228	P C B 1	P C B 2	P C B 3	P C B 4	P C B 5	P C B 6	P C B 7	P C B 8	P C B 9	P C B 10	P C B 11	P C B 12	P C B 13	P C B 14	P C B 15	P C B 16	P C B 17	P C B 18	P C B 19	P C B 20	P C B 21	P C B 22	P C B 23	P C B 24	P C B 25	P C B 26	P C B 27	P C B 28		
	ANN	Course	PCB	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
	Code Phase 1	+	+	+	+	+				+	+							+	+				+							
Code Phase 2	+	+	+	+			+		+	+			+																	
Code Phase 3			+	+	+		+																							
Code Test Phase							+			+																				
Report Phase																	+	+				+								

PÇB21 Bilgiye erişebilme, bilim ve teknolojideki gelişmeleri izleme ve kendini sürekli yenileme becerisi.