IM 39003
OHM Term project

Due Date: 07/04/2021 **Max. Points: 30 (+Bonus Points: 10)**

In the individual term project, you have an option of choosing one project from the following. You need to submit your code in Matlab/R/Python along with a report. Report should consist of your approach and discussion on key results. For report you can either prepare a docx or pptx file You need to make this submission via MS teams.

You may be asked to a demo on April 8, during lab hours.

Project 1: Optimizing Bank Lending Decisions Using Metaheuristics

Reference Paper

Metawa, N., Hassan, MK., Elhoseny, M. (2017) Genetic algorithm based model for optimizing bank lending decisions [Journal: Expert Systems with Application Expert Systems With Applications 80 (2017) 75–82

Task

Read the reference paper and learn about the bank lending decision as well as GA implementation.

1. Code this problem on Data provided below using GA (Maximum marks you can obtain is 20)
   or
2. Code this problem using GA and one more algorithm covered in the course and compare the results (Maximum marks you can obtain is 30)
   or
3. Code this problem using GA and amalgamation of algorithms covered in the course and compare the results (Maximum marks you can obtain is 30, 10 bonus points for using amalgamation of algorithms)

Data to be used

D	60									
K	0.15									
Loan Size	10	25	4	11	18	3	17	15	9	10
Interest	0.021	0.022	0.021	0.027	0.025	0.026	0.023	0.021	0.028	0.022
Rating	AAA	BB	A	AA	BBB	AAA	BB	AAA	A	A
Loss (λ)	0.0002	0.0058	0.0001	0.0003	0.0024	0.0002	0.0058	0.0002	0.001	0.001