FACULTY OF SCIENCE

ACADEMY OF COMPUTER SCIENCE AND SOFTWARE ENGINEERING

MODULE IT18X57

ADVANCED ARTIFICIAL INTELLIGENCE

CAMPUS APK

EXAM NOVEMBER 2019

DATE: 2019/11/12 **TIME:** 08:30 – 10:30

ASSESSORS(S) Prof EM Ehlers

EXTERNAL MODERATOR Prof JF van Niekerk
Noroff University College, Norway

DURATION: 2 HOURS **MARKS:** 100

THIS PAPER CONSISTS OF 2 PAGES INCLUDING THE COVER PAGE

INSTRUCTIONS:

1. Answer **ALL** the questions.
2. Write neatly and legibly.
3. Read the questions thoroughly.
4. Ensure that all questions are clearly marked on the answer sheet.

REQUIREMENTS: NONE

QUESTION 1

Compare machine learning immunological and computational models (in particular with respect to B-Cell and T-Cell inspired algorithms).

Define and motivate your own criteria for comparison. The comparison must be presented in a table format. You should define at least eight comparison criteria and give a brief description of how each of the above two types compare in terms of each criterium.

[50]

QUESTION 2

a) Briefly name and discuss the computational aspects of the immune system of interest to information processing.

(14)

b) Give a brief overview of the functionality of the module for which you were the lead for in the class project.

(2)

c) Briefly discuss the roles that 3 computational aspects in question 2(a) play in the module you identified in question 2(b).

(9)

[25]

QUESTION 3

Briefly discuss danger theory as one of the theoretical models of immune processes and how it has subsequently influenced the development of computational models.

[25]

TOTAL: [100]