

# Department of Computer Science and Engineering, IIT Palakkad

## Artificial Intelligence Lab

14:00-17:00 pm

AI Lab : GA (15 October, 2018)

### Problem 1

Develop your own genetic algorithm to generate a target string starting with any random string. Implement your algorithm in your favourite language, and test using the following case.

- Source string: “x xxxx xxxxxxxx xxxxxxxxx”
- Target string: “xxx loves genetic algorithm”

x in the first case are arbitrary letters. “xxx” in the second case is your name.

### Problem 2

Optimize the following problem using your own genetic algorithm. Compute the solution analytically and verify using your code.

$$\text{minimize } f_1(x) = x^2 \tag{1}$$

$$\text{minimize } f_2(x) = (x - 2)^2 \tag{2}$$

$$\text{such that } -10 \leq x \leq 10 \tag{3}$$