

INF3490 exercises - week 11 2013

Problem 1a (2010 exam)

Are long runs beneficial in genetic algorithm? Is it helpful to apply extra efforts on smart initialization of population in genetic algorithm?

Problem A4 (2012 exam)

Describe the purpose of parent selection and survivor selection in evolutionary algorithms. What is the general effect of using different implementations of these selection mechanisms?

Problem 1e (2011 exam)

State the similarities and differences between genetic algorithm (GA) and evolutionary strategies (ES). What are the meanings of $(\mu + \lambda)$ -ES, and (μ, λ) -ES?

Problem B2 (2012 exam)

How does a multilayer perceptron need to be adjusted so that it can represent an increasingly complex decision boundary? Briefly describe how the numbers of layers, nodes, and weights need to be changed.

Problem B11 (2012 exam)

Recall the ϵ -greedy policy whereby an agent chooses a random action with probability ϵ , and the action with the highest estimated value otherwise. Why do we typically decrease the value of ϵ over time?

Problem B12 (2012 exam)

How do self-organizing maps help reduce the dimensionality of data? Why is dimensionality reduction useful?