INF3490/INF4490 - Week 4
Optimization and performance

September 4, 2018

$\mathbb{P}$ marks the programming exercises, we strongly recommend using the python programming language for these. Exercises may be added/changed after publishing.

1 Pareto Optimality

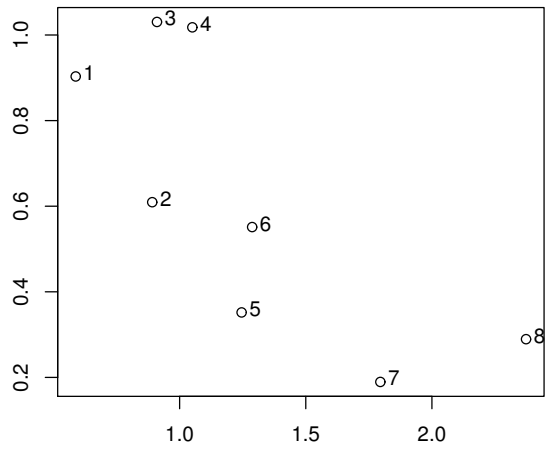

Figure 1: a

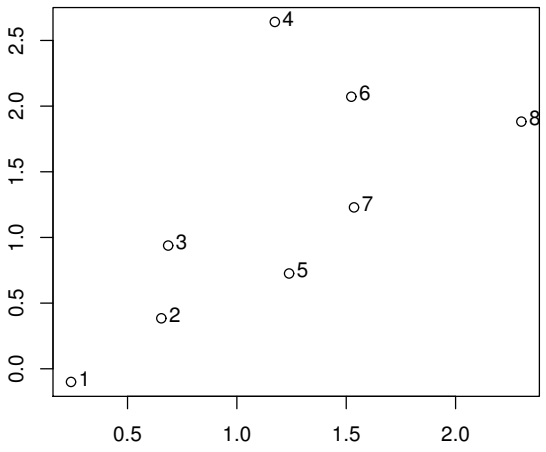

Figure 2: b

For figure a and b above, find the Pareto optimal set when

- Minimizing both f_1 and f_2
- Minimizing f_1, maximizing f_2
- Maximizing f_1, minimizing f_2
- Maximizing both f_1 and f_2

2 Weighted sum

In figures a and b, what would be the maximum point when using weighted sum:

- $w_1 = 1$, $w_2 = 1$
- $w_1 = -1$, $w_2 = 1$

3 Hybrid Algorithm

Why can hybrid algorithms make it harder to maintain diversity?

4 Measuring algorithm performance

Why is it usually better to use the number of fitness function evaluations as a time measure, rather than the number of generations, or the amount of CPU time spent?

Contact

The exercises are the same as those in the **GitHub repository**. If there are any suggestions to corrections of grammar, language or any additional suggestions, we appreciate all feedback! The TA's can be reached at **lonnekes@ifi.uio.no**, **hermankn@ifi.uio.no**, **a.s.skage@econ.uio.no** or **sharanak@ifi.uio.no**