

CSC3022H: Machine Learning

Lab 1: Concept Learning

Department of Computer Science
University of Cape Town, South Africa

August 3, 2015

Due: Friday, August 14, 2015, 10.00 am

Problem Description

Implement (in C++) the FIND-S algorithm (chapter 2 [Mitchell, 1997]). Use the training examples in table 1 to verify that it successfully produces the trace described in section 2.4 [Mitchell, 1997] for the *EnjoySport* example.

Q1: Now use this program to determine the number of random training examples required to exactly learn the target concept:

$\langle \textit{Sunny}, \textit{Warm}, ?, ?, ?, ? \rangle$

In a ZIP file, place the source code, executable, and a text file containing your list of random training examples and the answer to Q1. Upload ZIP file to the open assignment on *Vula* before 10.00 am, August 14.

Table 1: Positive and negative training examples for target concept EnjoySport

Example	Sky	AirTemp	Humidity	Wind	Water	Forecast	EnjoySport
1	Sunny	Warm	Normal	Strong	Warm	Same	Yes
2	Sunny	Warm	High	Strong	Warm	Same	Yes
3	Rainy	Cold	High	Strong	Warm	Change	No
4	Sunny	Warm	High	Strong	Cool	Change	Yes

References

[Mitchell, 1997] Mitchell, T. (1997). *Machine Learning*. McGraw Hill, New York, USA.