**COMP 3710 Applied Artificial Intelligence**

**Seminar/Lab 10.**

**Fuzzy control for A/C, and machine learning algorithms**

1. Objectives

* Apply fuzzy control system to A/C

1. Exercise

* Let’s try fuzzification and defuzzification using the next web application.
* [//cs.tru.ca/~mlee/comp3710/Fall2017/6.%20seminars\_labs\_project/w10\_exercise.html](http://cs.tru.ca/~mlee/comp3710/Fall2017/6.%20seminars_labs_project/w10_exercise.html)

1. Implementation of Fuzz A/C

* Power: [0, 10]
* Room temperature: [18, 40]
* Library: w10\_fuzzy\_control\_ac.min.js
  + run\_fuzzy\_ac(time, power): time is second from 0 to 60 \* 60 \* 24
  + check\_temperature();
  + check\_assessment(60 \* 60 \* 24);
* w10\_fuzzy\_control\_ac.html
* Algorithm:

var power = 0;

var current\_temperature = check\_temperature();

// per each second

for (var time = 0; time < 60 \* 60 \* 24; time++) {

if (time % 60 == 0) { // You may decide power every minute?

current\_temperature = **check\_temperature**();

...

... // decide power using fuzzy logic

}

**run\_fuzzy\_ac**(time, power); // per each second

}

... = **check\_assessment**(60\*60\*24); // It should be reported.

1. Submission

* 1) Fuzzy controller program, 2) the final assessment, and 3) screen shot showing the final assessment at the bottom of window.
  + Due: 6:00 PM, November 29, 2017
  + Total marks: 20
    - Any syntax error – zero
    - Any run time error – zero
    - Any partial implementation – zero
    - No screen shot – zero
    - Correct implementation – 20
  + The lower assessment value, the better.
  + The 5 top implementations will get 5 bonus marks.
  + Any late submission will not be accepted for sure.