Paper Citation: L. -. Wang and J. M. Mendel, "Generating fuzzy rules by learning from examples," in IEEE Transactions on Systems, Man, and Cybernetics, vol. 22, no. 6, pp. 1414-1427, Nov.-Dec. 1992.

**Paper Review:**

This paper introduces how to generate fuzzy rules. There are five steps:

1. Input / Output space -> Fuzzy regions (e.g.: small, center, big …), each of which has a fuzzy membership function (e.g.: triangle).
2. Generate rules according to degrees of input & output variables. Each variable has a corresponding degree in one particular region.
3. Handle the conflicted rules and reduce rule number according to degree of each rule.
4. Fill fuzzy rule base boxes (difference between ‘and’ and ‘or’).
5. Defuzzification.

**Application in our project:**

In our project, we can apply this approach to generate fuzzy rules. The input examples are from experiments, the output will be fussy rules (input -> output).

Input examples (in Analysis.xlsx):





Fuzzy rule base

For Parameter-7 tuned (A): whether tune ‘spark.shuffle.file.buffer’ from ‘32k’ to ‘16k’ (T-A) or ‘48k’ (T-B)



(Similar for other 11 parameters.)