Master of Technology

Computational Intelligence II

Workshop: Teaching quality assessment system

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Objectives

- On completion of this workshop, the students are expected to be able to
  - » design, build, and modify a simple fuzzy system by
    - ◆ specifying and changing parameters
    - ◆ debugging and testing the system
  - » understand the impact of
    - ◆ fuzzy membership functions
    - ◆ defuzzification methods

Task: Build a fuzzy system

Background information

- To build a simple system to evaluate a lecturer's teaching quality.

  » The overall teaching quality (TQ) consists of content quality (CQ) and presentation quality (PQ).

  » The values of CQ and PQ are from students' feedback and given by a score between 0 to 100.

  » TQ is the target output and represented by a score between 0 to 100.

Task: Build a fuzzy system

- Modelling the system with
  - » ***two*** input variables: CQ and PQ

    and

  - » ***one*** output variable TQ

- For each input/output variable, define ***three*** linguistic terms:
  - » *High, Medium,* and *Low*

- Define fuzzy sets and fuzzy rules based on ***your*** understanding, e.g.

    IF CQ is *high* and PQ is *medium*, THEN TQ is *medium*

Task: Build a fuzzy system

- Given the following three input cases (you may also get your cases as well), using your system to evaluate:

    TQ of lecturer-1:   given CQ = 60, PQ = 90

    TQ of lecturer-2:   given CQ = 80, PQ = 50

    TQ of lecturer-3:   given CQ = 100, PQ = 100

    discuss whether the results meet your expectation, and seek for possible enhancement.

Thank you!

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