

COMP 690 Data Fusion Fall 2009 Written Assignment 3

Due in the digital drop box by 11:00 PM on Monday, Nov. 30

The answers to the following problems should not exceed a half page each and in many cases could be rather shorter.

1. Characterize the kinds of data-fusion problems where forward-chaining rule-based systems are appropriate and the kinds of data-fusion problems where backward-chaining rule-based systems are appropriate. Justify your answers, but keep things brief.
2. In fuzzy set theory, a linguistic variable is usually a generic word that covers several more specific words with non-numeric meanings. The more specific words are thought of as the possible values for the linguistic variable. For example, height can be considered a linguistic variable with possible values short, medium, and tall. Each value of a linguistic variable is associated with a membership function. Consider a linguistic variable and identify its possible values. Plot convincing membership functions for the value as is done in slide 25 in the notes on Chapter 7
3. Take an example of a data fusion domain and discuss how a blackboard system handle this could be used to solve problems in this domain. Concentrate on levels 2 and 3 of the JDL model, but the system would handle all levels. A good picture to keep in mind is how a blackboard system handles the various levels involved in natural language understanding.
4. Take a data-fusion domain and sketch one situation template and one event template for that domain.