

Solution to Homework 22

Question. So how can we use fuzzy techniques to come up with explainable AI?

Answer. We start with expert rules – this what makes this approach explainable. We then use general fuzzy methodology – explained in the previous lectures – to find the first-approximation dependence $y = f(x_1, \dots, x_n)$.

When applying the fuzzy methodology, we used some parameters – e.g., for negligible, we selected 5 as the borderline value starting with which the difference is absolutely not negligible. The choice of these parameters is rather arbitrary. For example, to describe what is negligible, we could use 4 or 6 instead of 5.

So, instead of picking a single such value:

- we make this value a parameter, and then
- we find the values of all these parameters for which, for each k , the predictions of the resulting fuzzy system are the closest to the desired value $y^{(k)}$.