

Programming Assignment Sheet 1

Please implement programming assignments in one of the following programming languages:

- Java
- Python (preferred v2.7)

You can build programming groups of up to three persons. Please make sure that your source code can be explained by all of the team members and that the source code is not plagiarized. Please mark code from other sources and do not use packages containing the solutions for the core algorithms. The idea of programming assignments is that your understanding increases by programming the solution.

Remember: *Code is read more frequently than it is written.*

So, please add helpful comments to your source code and if necessary documentation on the compilation process. Send your solution via eMail to christoph.doell@iws.cs.uni-magdeburg.de at least 3 days before the exercise. It would be nice, if the mails subject contained „Fuzzy Systems“ so that my mail filter is able to order it correctly.

Programming Assignment 1 α -cut Representation

Implement the data structure from the lecture that can horizontally represent a fuzzy set by its α -cuts. In detail, solve the following subtasks.

- Enable the user to enter a finite subset $L \subseteq [0, 1]$ of relevant degrees of membership.
- For every $l \in L$, the user shall be able to specify the α -cuts corresponding to l .
- Finally, implement a method that returns the membership degree $\mu(x)$ of an element x given your data structure of a fuzzy set.