EditFuzzyCategories - Module for editing fuzzy categories

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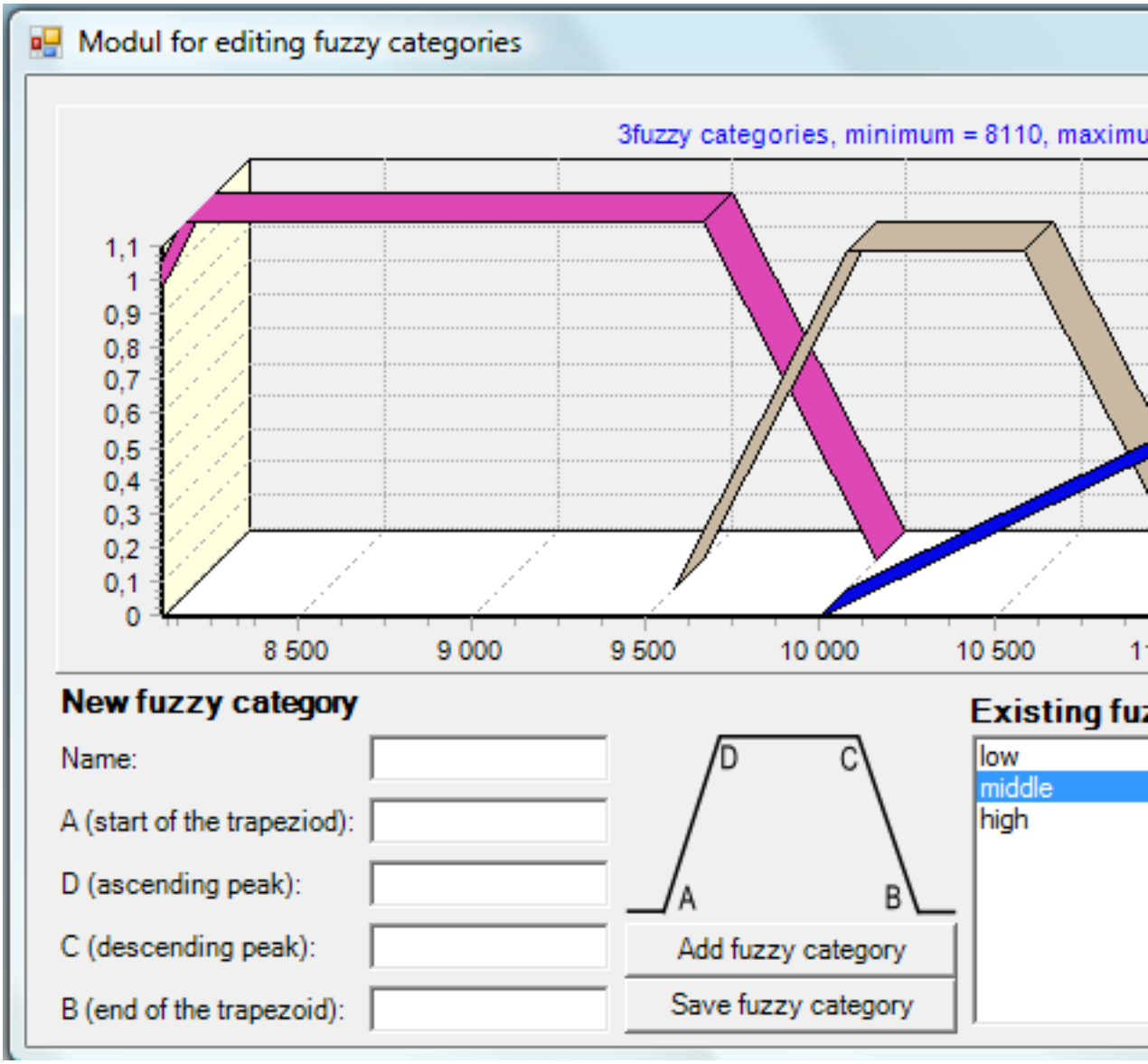
This document describes the user interface for EditFuzzyCategories module. It also contains some simple examples and screenshots for the users to make using this module easier.

Introduction

Welcome to Edit fuzzy categories module. This is a module designed for manual creating and editing of fuzzy categories, that have trapezoidal shape.

Parts of the user interface

The figure below shows the module. The upper part is a graph showing the existing fuzzy categories. In the lower part, there are text boxes and buttons to manipulate with the fuzzy categories. In the lower right corner, there is a list of existing fuzzy categories.



Graph of the fuzzy categories

The displayed graph shows all the fuzzy categories defined by the module. A 3D view was chosen, because it looked better than the 2D one. If there is no fuzzy category, the axis do not have any scales. This is a technical limitation of the underlying graphing library. The minimal and maxima values of the attributes is displayed in the text area above the graph. The scales appear, when there exist at least one fuzzy category.

The axes are scaled according to the minimal and maximal values of the attribute. The legend appears, if there are at least two fuzzy categories.

User actions

Adding a fuzzy category

If the user wants to add a fuzzy category, (s)he adds required information about the category- name of the category and the A, B, C and D values of the trapezoid. There are several constraints that the trapezoid must fulfill:

- The condition A < D < C < B in order to get a proper trapezoid.
- The A value must be less than maximal value of the attribute
- The B value must be greater than maximal value of the attribute
- The name of the fuzzy category has to be unique.

If these are fullfilled, after clicking on the "Add fuzzy category" button, the fuzzy category is added.

Enabling and disabling the LCFAR compliant fuzzy categories

Fuzzy association rules mining can be either based on the fuzzy set theory or on a fuzzy logic. In the fuzzy set theory, trapezoidal fuzzy set can have overlapping peaks (parts of the fuzzy set where the value is 1). In the logical based Logical calculi of fuzzy association rules (LCFAR), this is not allowed. For more details see [Ralbovsky].

Removing a fuzzy category

In order to remove a fuzzy category, user selects a category from the list of categories and then clicks to "Remove fuzzy category".

Editing a fuzzy category

The user needs to select a fuzzy category to be edited from the list of categores. After clicking on "Edit fuzzy category", the details of the fuzzy category are displayed in the corresponding text boxes. After editing, the button "Save fuzzy category" should be clicked. Again constraints from adding fuzzy categories (previous text) must be fullfilled.

If the user edits the category and clicks on "Add fuzzy category" instead, a new category is created. In order to do this, the name of the category must be different from the name of the edited categories and also some of the values need to be different.

Saving created fuzzy categories

After the process of creation and editing of fuzzy categories, user should click on "OK" button in order to save categories and sending the information back to the Attribute with fuzzy categories box.

Bibliography

[Ralbovsky] Martin Ralbovský. *Fuzzy GUHA*. 2009. Doctoral dissertation thesis at University of Economics, Prague .