Client-Side Many-Valued Context Scaling Documentation

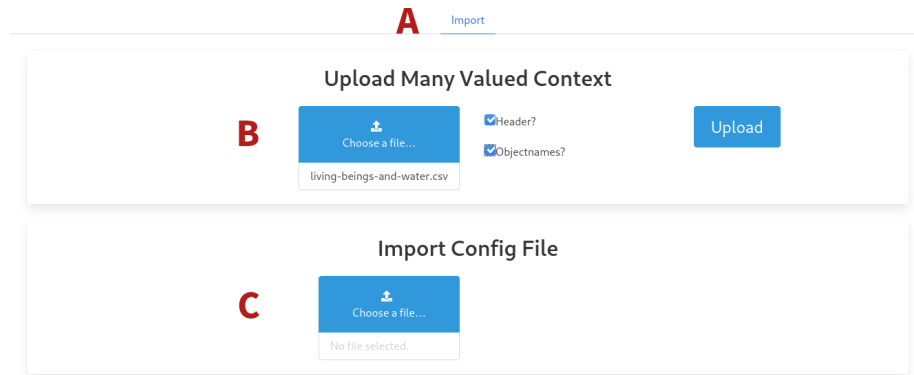April 7, 2020

Contents

1 Upload

Figure 1: The panel to select files

1.1 Features

- The topmost bar (Fig. 1 A) allows for navigation and is updated with new panels whenever they get accessible.

- Select any local .csv file with a mv-context (Fig. 1 B).

    - There is the option to include a "header" (first line in file) with attribute names.
    - "Objectnames" can be included in the first column of the file.
    - To upload the file, click the "Upload"-button.
    - Example .csv file with "header" and "objectnames"

    ```
    1          Age, Sex
    2 PersonA, 30, m
    3 PersonB, 25, d
    ```

- Additionally, you can edit already scaled contexts by importing config files (Fig. 1 C) generated by the last panel in this document.
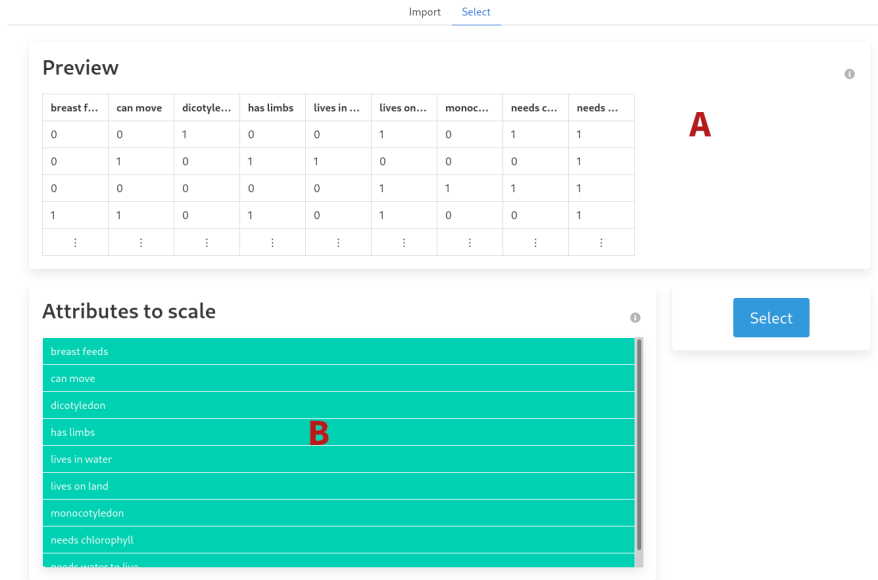
2 Attribute-Selection

Figure 2: The panel to select attributes

2.1 Features

- The top half (Fig. 2 A) displays a preview of the uploaded data.

- The bottom half (Fig. 2 B) allows for attributes to be selected for scaling. By default all attributes are selected (green) but can be unselected (white) with a click.

  - By holding down the mouse button multiple attributes can be de-/selected.
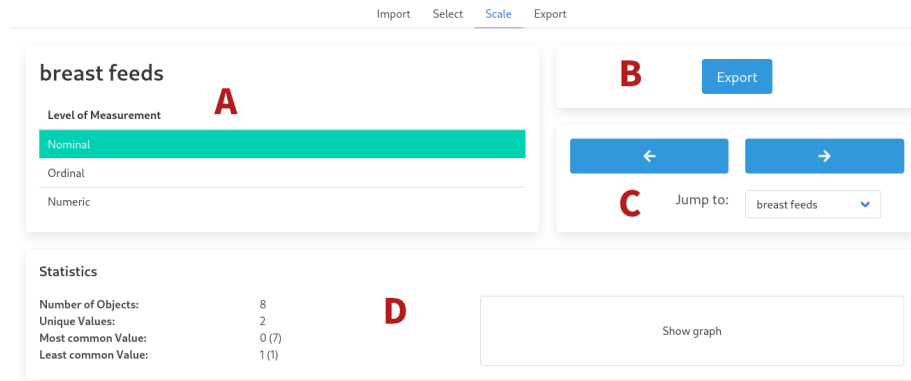 - Click "Select" to manually scale the chosen attributes.

3 Scaling

Figure 3: The panel to scale attributes

3.1 Features

- The top left half (Fig. 3 A) allows for the selection of the scaling method for the current attribute (title). Based on the corresponding data some options may not be selectable.

  - Subsequent sections will go into "Numeric" (Section 7) and "Ordinal" (Section 5-6) scaling, both of which will keep the header section as shown here. "Nominal" scaling is done automatically and therefore only consists of the header.

- The top right half (Fig. 3 B) allows for the "Export" of the scaled context. All unchanged attributes may be scaled nominally.

- Below the "Export" (Fig. 3 C) one can change the current attribute.

- Each scaling method shows "Statistics" (Fig. 3 D) relevant for the scaling and the option for a graph.

4 Scaling Graph

Figure 4: The panel to select attributes

4.1 Features

- By clicking the button (shown in Fig. 3 D) a temporary graph is generated (Fig. 4 A). The graph will disappear upon changing the scaling method or upon changing the current attribute and has to be generated again.
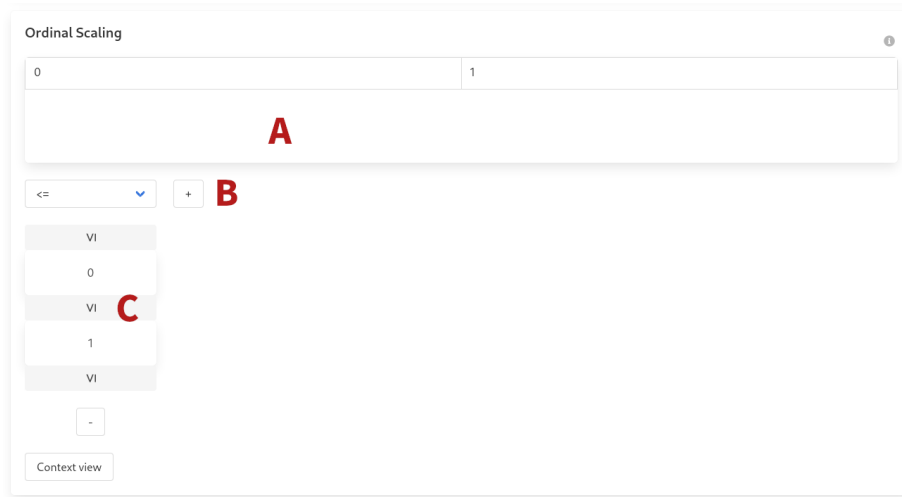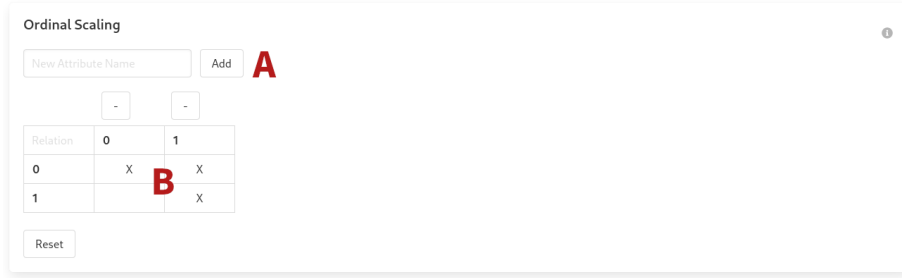
5 Ordinal Scaling

Figure 5: The panel to scale ordinal attributes

5.1 Features

- The default option to perform ordinal scaling is to build orders from the possible values.

- The box on top of the panel (Fig. 5 A) contains each different value the attribute has.

- Below a new order can be created either by clicking the "+" (Fig. 5 B) or by dragging values from the box above on the "+"-button.

  - Each order (Fig. 5 C) has a drop-down menu were an order relation can be selected.

  - By dragging values onto the grey areas the value is inserted into the order.

  - Values can also be dragged out of the order or into different positions by dragging the white box of the corresponding value.

- The "Context view"-button transforms the current orders into a context and changes the panel.

7

6 Ordinal Context Scaling

Figure 6: The second panel to scale ordinal attribute

6.1 Features

- Per default the generated context is quadratic (Fig. 6 B) and contains all orders previously built.

- New attributes can be generated by writing their name in the topmost input field and clicking "Add" (Fig. 6 B). Clicking the "-" removes the attribute below it.

- Attributes and objects can be sorted with drag and drop.

- The top left corner allows to name the relation used which is purely cosmetic.

- To swap a relation between " " and "x" click the corresponding field.

- "Reset" discards all changes done to the context and return to the previous panel with all orders built before.

7 Numeric Scaling

Figure 7: The panel to scale numeric attributes.

7.1 Features

- The upper panel (Fig. 7 A) contains all selected attributes.

    - "new Attribute" and "remove Attribute" add/delete attributes.
    - The attribute name can be clicked and written in to change it.
    - "+" and "-" add/delete intervals (Fig. 7 C) from an attribute.
    - A value is added to an attribute if it is contained in one of its intervals. The interval can be toggled to be open ("(") and closed ("]") by clicking the brackets.
    - Intervals can moved to other attributes by drag and drop.

- The lower panel (Fig. 7 B) generates attributes.

    - By clicking "Generate" the written number of intervals is generated by the selected method from the drop-down menu.
    - Those attributes must be selected to be used by clicking "Select" or "Select all". Selected Attributes are moved to the upper half.
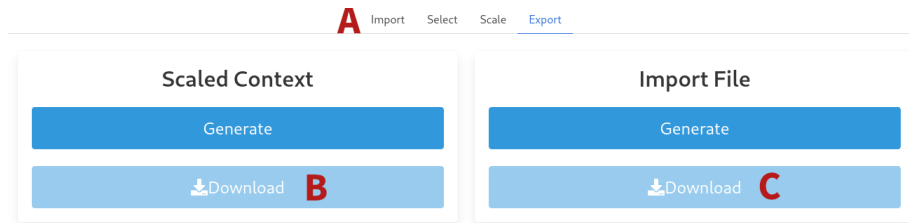
8 Export panel

Figure 8: The panel to export the scaled context

8.1 Features

- On top is the navigation bar with all possible entries (Fig. 8 A).

- By clicking the corresponding button an import file and a scaled context can be "generated".

- The scaled context applies all chosen scales to the selected attributes and outputs the context in "Burmeister"-format (Fig. 8 B) .

- The import file (Fig. 8 C) consists of a .json file with the current state of the application. This file can later be used to change the different scaling methods applied to the attributes or to change the selected attributes.