Additional Material

Mushroom Data Set visualized with CatNetVis The mushroom dataset consists of 8124 instances of mushrooms with 22 different attributes. In this dataset, each observation represents a mushroom, and there are two classes: edible and poisonous mushrooms. The attributes include physical properties like the shape, color of the cap, or odor of the mushroom, as well as dimensions about their population, habitat, and more.

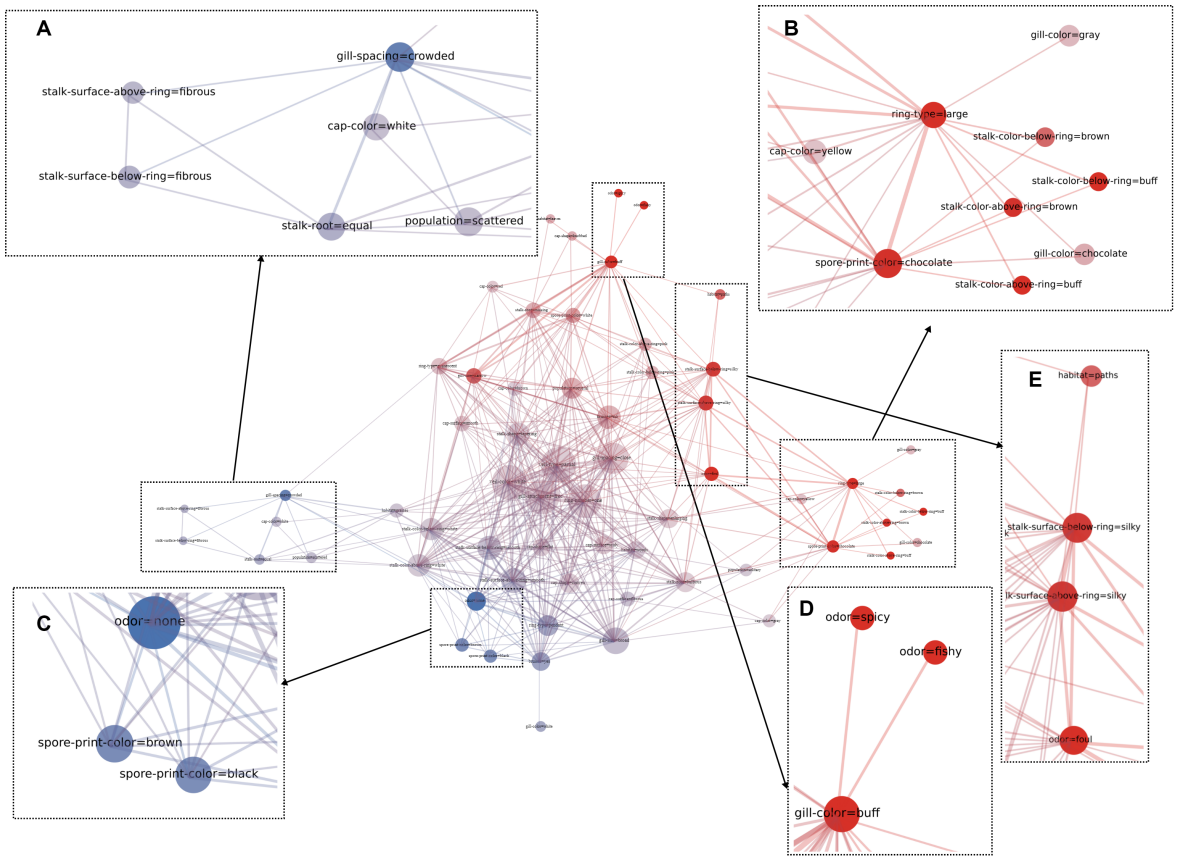

Figure 1: Mushroom data set visualized with *CatNetVis* filtered with minimum size greater than 0.05 and $\alpha > 0.25$

Figure 1 shows the *CatNetVis* visualization of the mushroom dataset, which highlights the semantic connections between attributes that share at least 25

In addition, there are smaller communities of blue (edible) mushrooms on the left and red (poisonous) mushrooms on the border of the layout. By zooming into these communities, we can study the semantic relations in more detail.

For example, in Figure 1 (A), we can see a community of six different categories that are mostly edible. The categories are closely connected, and we can observe that *gill-spacing = crowded* is strongly related to *cap-color = white*, *stalk-root = equal*, and *population = scattered*. In Fig. 1 (B), we see a community of nine nodes that are mostly poisonous, and all of the mushrooms in this community have a *large ring-type*. These mushrooms also share the characteristic of having a *chocolate spore-print-color*, while the *stalk-color-above-ring* is either *brown* or *buff*. Finally, Fig. 1 (C) shows that the odorless mushrooms are mostly edible and have a *brown* or *black spore-print-color*. On the other hand, the mushrooms with a *spicy* or *fishy* odor are mostly poisonous and have a *buff gill-color*. The community in Figure 1 (E) includes mushrooms with a foul odor that have a *silky stalk-surface* and mostly grow on *paths*.

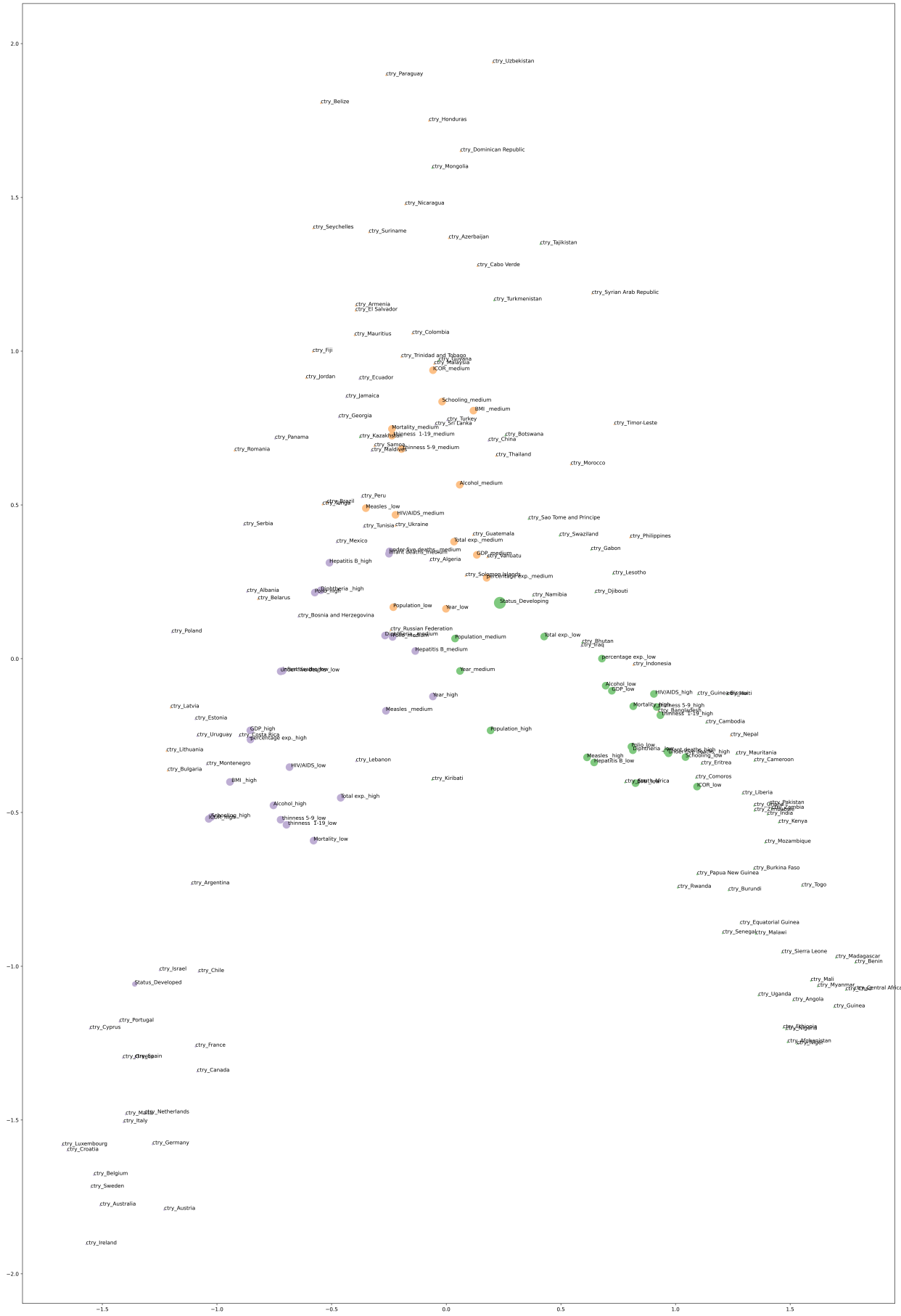

Figure 2: Example of the life expectancy data set using the MCA projection. We can see a horse-shoe shaped form and the labels are difficult to read, because they appear close to each other. Our force-directed approach avoids this problem.