

Assignment 5: Highlight Temporal Trajectories

Readme:

Basing this on my version of Project 4, I felt that the background needed to be lighter for better visibility and, at least in my opinion, it looks more professional and appealing that way. I also lightened the trend of entry bars so that when I rendered the glyphs in black they would stand out.

After several attempts to create a preprocessing tool in C++, I found I was spending far too much time fighting with my IDE and compiler for some reason, and not much on the actual visualization work. So instead, I looked around for options to import that sort of file into D3 and do the processing there. I was a little uncertain about what to do in cases where the first of a pattern-pair occurs followed by an entry with no type, followed by the second of the pattern pair. I decided that it might be useful to count these as instances of the pattern, regardless of how many “none” entries are sandwiched in between the pattern positive entries, as long as no instances of any other type occur first. And I tracked the number of entries in between so that the glyphs could be placed roughly halfway in between the two qualifying entries.

The glyphs I found I could render dynamically by using svg paths, and I found passable pre-existing path renders on a free icon website. This took a good bit of trial and error for sizing and positioning, especially for the versions which needed rotating (since there’s no way to set the anchor to the middle of the shape, unlike text objects in svg).

After setting up the javascript to display the glyphs at the right locations, I noticed that there were occasionally some visibility issues when certain glyphs were rendered immediately next to certain others, making it difficult to clearly determine which pattern is present where. To manage this issue, I set up a randomization function to shuffle which icons are assigned to which pattern, so that if one pattern for a certain pattern is difficult to view, you can refresh and get an alternate set of assignments.

Critical Evaluation:

First of all, there’s definitely an issue with glyph overlapping. Even with the visualization maximized to my large screen size, there’s issues whenever a pattern occurs frequently in a small space. It’s also difficult to identify precisely where the glyphs point to, though if one knows what colors a pattern corresponds to and the glyphs don’t obscure the colored bands entirely, it can be easier to nail down. On the plus side, most of the glyphs are, as advertised, easy to distinguish one from another.

In terms of observing patterns, I do notice that there are a number of patterns that for an individual patient occurs only before or after their traumatic brain injury, though I’m not certain what that might mean. I also observe that this method of pattern identification is biased towards pinging on patients that have frequent events of both types of a given pattern, such that it alternates, making the relevant glyph pop up many times in a row. I suspect that this may dilute

the usefulness of this method, since it means that the glyph doesn't imply any causation, and it only pings on a portion of the cases where the two relevant symptoms merely co-exist.

I do wonder if there might be a better way to arrange the glyphs to minimize overlap, both of other glyphs and possibly also of the assignment 4 colored bars. Perhaps halve the height of the bars and have the glyphs float above each bar?