

MetroViz Critique

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MetroViz is a visualization tool aiming to understand quality and usage information of public transportations. It has potential to become a useful tool for not only transportation service providers and researchers but also everyday riders. The report is well written and the video demo is interesting.

In particular, I found following aspects attractive.

1. Use calendar view to show adherence makes a lot of sense. Proper presentation of temporal data is always a challenge in information visualization. MetroViz team successfully designed calendar view to show adherence data over months and years. Calendar is a natural way of showing daily activities.
2. MetroViz models public transportation data into three levels: stop, route and trip. The design is stick to overview-to-detail principal. I like the different level of details presented in the demo.
3. I like when you hover the mouse over a certain stop, the same stop in different route all get highlighted.
4. Search feature seems handy. It is good to know that this feature is improved after the initial usability study, which means usability study really helped in developing the system.

I would like to suggest following improvement in both report and video demo.

1. It is indeed a nice idea of having a system screenshot at first page right below the paper title. This gives reader some intuition about the function of your system even before reading the report. It will be even better if you can put more captions in Figure 1 to make it more self-contained.
2. It might be helpful to have some clear definition for terms you are using in the visualization. For example, at first I thought 'adherence' is measuring the riders. Clear definition of those terms will help people outside this research area easy to understand the message you provide.
3. MetroViz team did a good study on literature review. However, since there is no existing visual analysis tool for this problem, it seems not necessary to talk a lot about irrelevant public transportation research such as travel time prediction in the related works.

A bit more discussion about comparisons between this visualization and other spatial-temporal visualization will enhance the section 2.2.

4. I often use NextBus for planning my trip when taking UMD shuttles. It also has an interactive map. It will be interesting to mention and talk about it in the related works section.
5. The number in calendar view legend has too many digits (For example, Figure 3). I doubt this can provide any additional insight to user. Maybe using just integer as default is enough. You can make an option for switching in special cases.
6. The color used in calendar view might need careful consideration. For me, the blocks with white color stand out more often than others and attract my attention. However, white color means void data in this visualization. A better design in color selection might help.
7. It is nice to have pie chart at each stop showing the fare type. How about showing a glyph of average adherence level? This can serve as a quick overview of each stop.
8. The calendar view with stop component example showed in the video demo seems to be more informative than the one used in the report (Figure 2).
9. Some typos and confusing sentences:
 - Page 2, third line. I found the sentence 'to explore the trip details in the trip and stop components of the calendar view' confusing.
 - Please add page number to your report.
 - Section 3, first paragraph, second line might need to be rephrased.
 - Section 4, first paragraph, last line might need to be rephrased.
 - Section 6.1, sentences in Usability Tests contain extra spaces, and sometimes miss question marks.