Visualizing Public Transportation Arrivals

PROBLEM
Public transportation time schedules are often littered with extraneous data irrelevant to passengers who only seek the next immediate arrival. We sought to use visualization to address this issue and to help users identify the fastest route to their destinations.

E.J. Marey’s graphical train schedule.

MOTIVATION
The proliferation of transportation data has brought with it access to information beyond that of just time schedules.

We see visualization as a way of complementing these existing methods and making sense of this data. For instance, we now have access to real-time arrivals data as well as geographic information of transportation networks.

APPROACH
We experimented with various visualization techniques in our attempts to provide an effective layout for our visualization.

We used the Bay Area Rapid Transit (BART) network as an example for our visualization. We included an actual map of the network as well as the surrounding areas for user reference and station selection.

INITIAL VIEW
The initial station selection can be selected via a dropdown menu or by directly clicking on the location of a station on the map.

INITIAL STATION SELECTION.

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LAYOUT

By using a radial representation of time, we now gain some sense of geographic orientation. However, it may be unusual and even difficult for users to gauge time in the form of circles.

FUTURE WORK
• Include other public transportation networks.
• Scale beyond just arrivals. Enable passengers to detect transfers and connections to other networks.
• Experiment further with other layouts.