

# Flowstrates++ : A visualization tool for multi-dimensional temporal origin-destination data

Nicolas Fuchs

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Based on a java program, called Flowstrates, enabling visualization of spatiotemporal origin-destination data, Flowstrates++ is a web version of Flowstrates dealing with multi-dimensionality of OD data. External spatiotemporal data can be visualized in the same interface in the form of a heatmap. Two very similar versions of Flowstrates++ have been implemented with different user interfaces. The challenge addressed in this work is to enable the establishment of relationships between the different datasets visualized by the program.

To test the versions of Flowstrates++, ten users participated in an in-lab user evaluation asking them to discover findings about data. Designed as an in-between experiment, the evaluation comprised 3 main parts. The first part was dedicated to one of the two versions during a period of 10 minutes. The second part of same duration was devoted to the switched version. Finally a qualitative questionnaire without any time limit was answered by the user.

Results supported the first part of the initial hypothesis which stated that version B of the program, displaying both alternative datasets on the same heatmap, was better suited for datasets comparison than version A, which only displays one dataset at a time. Nevertheless, the second part of the initial hypothesis which stated that version A was easier to handle was contradicted. Results also showed that the user was mainly focused on the origin-destination dataset and in a second phase was interested in the remaining data for both versions.

**Note: 6**

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