Extended possibilities of ScanGraph – a tool for revealing respondents' strategy from eye-movement data

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The tool called ScanGraph was originally presented in the paper (Dolezalova and Popelka 2016) published in the Journal of Eye Movement Research. The development of the tool continued even after the publication. The aim of the demo is to introduce new possibilities contained in the tool.

The tool calculates the similarity of scanpaths and display the result as cliques of simple graph. Since the original publication of the tool, Damerau-Levenshtein algorithm was added to calculate the similarity and Bron-Kerbosch algorithm replaced the heuristic finding of graph cliques. Originally, the tool worked only with data exported from open-source application OGAMA. The conversion tool that allows to use data directly exported from SMI BeGaze. The biggest enhancement of the tool is the possibility to calculate similarity among participants not only for a single stimulus, but for multiple files at once.

This possibility is introduced on the example where three groups of participants (cartographers, lawyers, and administrative staff) were solving tasks focused on the cartographic literacy. The aim of the experiment was to determine the degree of cartographic literacy of individual groups of map users. The differences between the groups were investigated with the use of three eye-tracking metrics. The similarity between map reading strategies of participant groups was investigated with the use of ScanGraph.

Anyone can try ScanGraph freely at www.eyetracking.upol.cz/scangraph.

Keywords. Cartography, Eye-tracking, String-Edit-Distance

Dolezalova, J, Popelka, S (2016) ScanGraph: A Novel Scanpath Comparison Method Using Visualisation of Graph Cliques. Journal of Eye Movement Research, 9.