MASTER'S THESIS
AT FLATFROG

Investigation of mathematical models for trace prediction of pen input on a multi-touch screen

For large multi-touch screens designed for collaboration, total system latency is an important parameter affecting user experience. The system latency is a combination of the latency of the multi-touch system, the operating system and the display rendering system. One way of improving the latency experienced by a user, is to reduce the visual lag of traces in a drawing application by means of trace prediction.

This project aims at investigating different mathematical models for trace prediction of pen input in a drawing application. Implementing the prediction in an application, rather than in the touch system itself, gives extra degrees of freedom since trace prediction can be changed when new data is available from the touch system and traces can be redrawn in the application. The models should be based on knowledge of the capabilities and limitations of human muscle movement when drawing with a pen on a large screen. The focus of the project should be on improving user experience. The prediction models should be implemented in a PC environment and evaluated using data from Flatfrog's large multi-touch screens.

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