

Roland Wasserer: Visualization of Mosaicked Aerial Image Data for Disaster Management Applications

Description

For disaster management it is important to receive a visual overview of the disaster area. Unmanned Aerial Vehicle's (UAVs) equipped with cameras capture the scene from bird's-eye view and obtain aerial image data. Due to the UAVs' limited flight altitude more than one image must be taken to completely cover the area. In a post processing step the mosaicked data are fused to a visual representation of the disaster scene. Since the pictures capture two-dimensional information, the overview image is represented in 2D. This constraint limits the users' conception leading to a more difficult usability.

This master thesis focuses on improving the usability of the visualized mosaicked aerial image data provided by UAVs. First, standard methods of usability in disaster management applications are evaluated. Especially, graphical user interfaces (GUIs) concerning two-dimensional and three-dimensional representation are discussed. The second part of the thesis addresses fusing 3D surfaces with 2D image data in GUIs. The visualization is implemented in Java and integrated in the existing framework of the collaborative micro-drones project.

Advisor

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