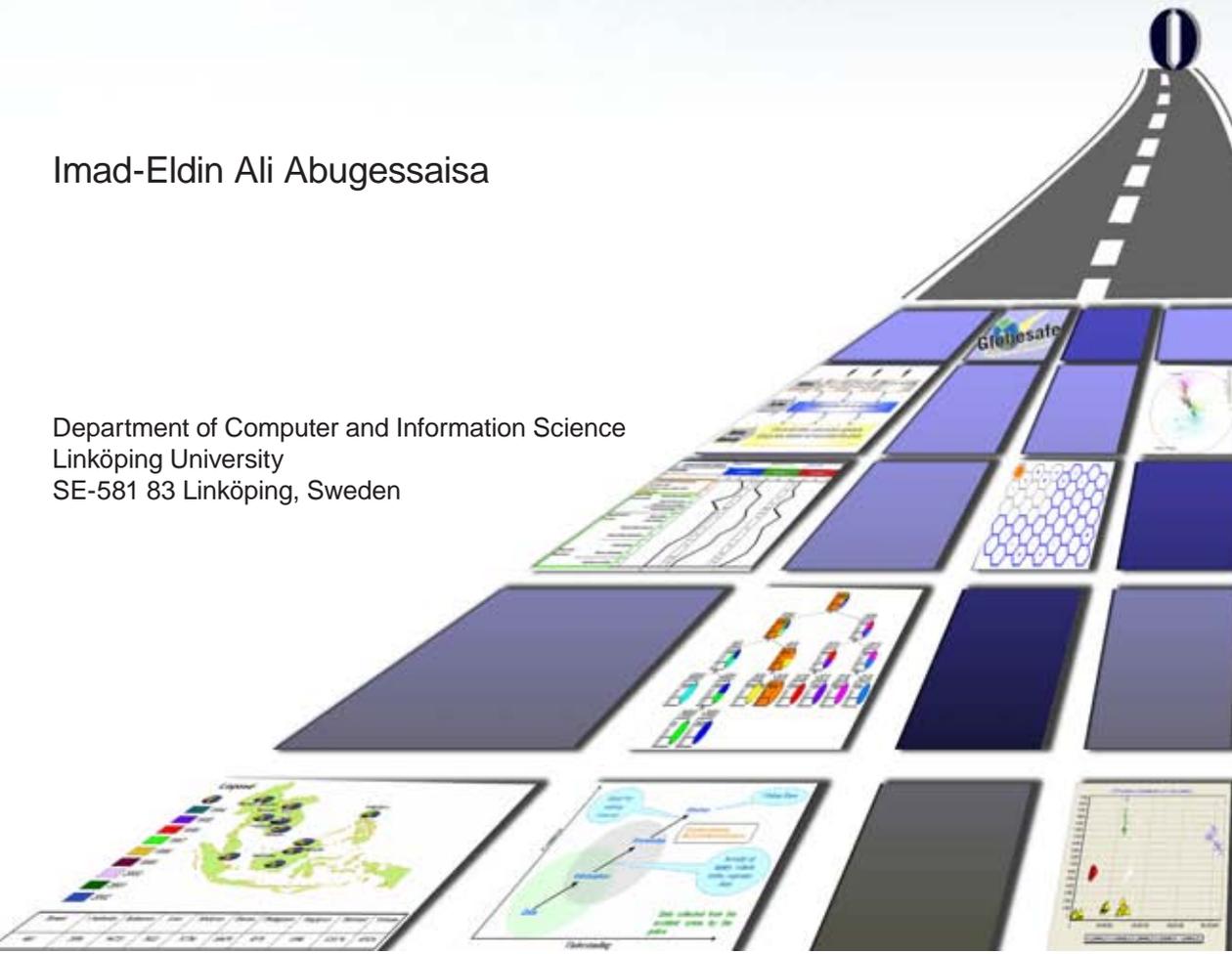


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# Analytical tools and information-sharing methods supporting road safety organizations

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A prerequisite for improving road safety are reliable and consistent sources of information about traffic and accidents, which will help assess the prevailing situation and give a good indication of their severity. In many countries there is under-reporting of road accidents, deaths and injuries, no collection of data at all, or low quality of information. Potential knowledge is hidden, due to the large accumulation of traffic and accident data. This limits the investigative tasks of road safety experts and thus decreases the utilization of databases. All these factors can have serious effects on the analysis of the road safety situation, as well as on the results of the analyses.

This dissertation presents a three-tiered conceptual model to support the sharing of road safety-related information and a set of applications and analysis tools. The overall aim of the research is to build and maintain an information-sharing platform, and to construct mechanisms that can support road safety professionals and researchers in their efforts to prevent road accidents. GLOBESAFE is a platform for information sharing among road safety organizations in different countries developed during this research.

Several approaches were used, First, requirement elicitation methods were used to identify the exact requirements of the platform. This helped in developing a conceptual model, a common vocabulary, a set of applications, and various access modes to the system. The implementation of the requirements was based on iterative prototyping. Usability methods were introduced to evaluate the users' interaction satisfaction with the system and the various tools. Second, a system-thinking approach and a technology acceptance model were used in the study of the Swedish traffic data acquisition system. Finally, visual data mining methods were introduced as a novel approach to discovering hidden knowledge and relationships in road traffic and accident databases. The results from these studies have been reported in several scientific articles.

