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**TRANSFER OF TRAINING FROM SIMULATION TO REALITY:  
INVESTIGATIONS IN THE FIELD OF DRIVING SIMULATORS**

A dissertation submitted to the

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presented by

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dedicated to Katja



## Interest for the industry

From the outset, the aim of this work was to investigate simulators and conduct experiments which would help the simulator industry and simulator users shed some light on the equivocal subject of training effectiveness in driving simulators.

The work in this book provides evidence that transfer of training from driving simulators into the real world can, and does, occur. It demonstrates that even very simple driving simulators can impact on the learner and, in certain circumstances, be used for educational and further educational reasons.

A deeper analysis of the main experiments presented in this book suggest that a precise task analysis of the training task should be implemented *before* a simulator is brought in as a training tool. This task analysis has an important impact on the design and effectiveness of the simulator and also on the cost of the system.

In addition, a clear and precise user analysis should be carried out as well as an organisation analysis. The user analysis is not only an investigation into the interaction between trainee and system, but also the interaction between *trainer* and system.

The acceptance by the user of a training device is a very important issue e.g. young driving students have probably no problem in working with a training device powered by computers whereas elderly people are more likely to experience problems. Furthermore an organisation that wishes to implement a driving simulator into their training system should analyse the organisation itself to determine the way in which the system will be used and consider how this will affect the design of the system. The question arises: where does the simulator fit in to the overall scheme of the training curriculum, is it the main source of training, or is it merely a tool used to train one aspect of the training programme that is unable to be taught in the real world?

Driving simulators are still rarely used for training and education despite the fact that they are objective observers and are therefore able to give clear, precise and unbiased feedback to the trainees. A short cost analysis of comparable expenses of training trainees in well-designed driving

simulators, especially in the field of eco-driving and normal driving teaching, turns out to be favourable.

With this in mind, the last section of this book presents a simple design and a short description of a possible driving simulation system which could be used for training driving students in Switzerland. This design is called SwissDriveSim and takes in to account all the experiences the author has gained whilst working with driving simulators and the discussions held with instructors and users of present driving simulation systems.

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Marcel B.F. Uhr

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