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Context Management and Personalisation:

A Tool Suite for Context- and User-Aware Computing

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Rapidly changing requirements and dynamic environments drive the development of context-aware applications. Research into context-aware computing focuses on programming frameworks and toolkits that particularly support developers in the design of context-aware applications. Some types of modern context-aware applications require instant adaptation due to their exposure to increasing situational dynamics: the operational environment will change, the tasks will be distinct, the end-users will be heterogeneous, and their competences and expectations will evolve. Developers cannot anticipate all potential situations during the design phase of the application, but for the end-user this bears the risk of getting into situations, in which the implemented context-aware application behaviour is inappropriate, undesired or even embarrassing or dangerous.

This book describes the approach of providing a design view of context-aware applications, which makes such applications transparent and configurable for other relevant actors participating in the software development process. Therefore, this book compiles a comprehensive understanding of the processes involved with context-aware computing in general and elaborates a role-oriented common conceptual framework. A correspondent software framework and specific tools permit the control over the internals of the application during design- and runtime and support roles such as developers, domain experts, authors and end-users in the software development process. A set of operational context-aware applications prove the validity and general applicability of the elaborated models, frameworks and tools.