Título: **Approach to define Correlations Between HCI Quality Characteristics of UbiComp and IoT Applications using Softgoal Interdependency Graphs**

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Resumo:

Ubiquitous Computing (UbiComp) and Internet of Things (IoT) create an environment full of smart and interconnected things, which can be accessed and controlled by several applications running on different devices. These applications bring a new set of non-functional requirements (NFRs), mostly quality characteristics related to human-computer interaction (HCI), such as Invisibility, Context-Awareness, Mobility, Attention, Calmness and Synchronicity. NFRs can interact negatively with each other, which can happen when a procedure favors the first NFR but creates difficulty for the second one. Knowing about negative interactions helps with avoiding commitments to conflicting NFRs and to support the selection of strategies with most benefit and least sacrifice for achieving different NFRs. A common solution in the literature for helping developers in this scenario is the use of catalogs, which is a body of knowledge about NFRs that has been accumulated from previous experience. The literature has several catalogs, but they usually focus on requirements and procedures that are generic to any system.

However, as previously mentioned, new NFRs can impact traditional ones, specially Usability, since UbiComp and IoT applications are likely to have users feeling annoyed and overwhelmed due to its nature of being available every time and everywhere. Therefore, this Ph.D. work aims to define an approach to investigate the impact of specific HCI quality characteristics on Usability. In this approach, first, NFRs need to be specified in the notation Softgoal Interdependency Graph (SIG), then, the correlations should be identified. A process that organizes the step-by-step and the techniques for the construction of the SIGs is also part of this approach. Moreover, a correlation catalog for Invisibility and Usability is developed as a proof of concept using this approach.

Banca:

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