

Master Thesis Subjects

Title: Performance evaluation in the context of a learning and user behavior prediction platform

Location: University of Kassel

Home Department: Communication Technology

Contacts: Professor Klaus David (david@uni-kassel.de)

Targeted trainer: Master

Duration: 6 months.

Context: The term “Cognitive Systems” refers to systems able to make decisions autonomously and adapt their functions taking into consideration the feedback from the context, systemic aims and principles, as well as the capabilities of the system and the created knowledge. To this end, the cognitive functionalities for the application management of mobile devices include actions for the autonomous selection of the functionality of the device in a seamless way for the user, avoiding any type of interaction or feedback from the user and preserving the smooth operation of the application. For this selection to take place, the following factors are taken into consideration: (i) the context, (ii) the user preferences, (iii) the policies and (iv) the knowledge and experience related to all aforementioned factors.

Objectives: The target of this master thesis is the development of a platform including functionalities that enable learning user preferences (in conjunction to the functionalities of the device) in various conditions (i.e. different preferences of the same user for different time-zones, business or leisure). Based on user preferences, the platform will have to adapt the respective device functionalities. The end of the master thesis will be devoted to the preparation of the report summarizing the performance evaluation results (details on how rapidly the functionality is changing in the device, memory consumption, battery needed to operate this platform on a mobile device) and a research paper to be submitted for publication.

Expected competencies:

- Cognitive Systems
- Reconfigurable Systems
- Machine learning
- Web Services
- Smart Device Applications, .NET
- Android

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Title: Design and performance evaluation of a platform for the selection of the most suitable functionality for a mobile device

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Objectives: The aim of this master thesis is the development of a platform that includes functionalities that allow the selection of the operation type of a mobile device and at the same time creates experience in making certain decisions. More specifically, each time a certain decision is made for the way the device operates, this decision will be taken down in a Data Base, along with the circumstances and the level of appropriateness of each decision (how effective or not was the decision). This will enable the platform to apply its previous experience and make faster more efficient decisions for the operation of the mobile device. The end of the master thesis will be devoted to the preparation of the report summarizing the performance evaluation results (details on how rapidly the functionality is changing in the device, memory consumption, battery needed to operate this platform on a mobile device) and a research paper to be submitted for publication.

Expected competencies:

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