

FREIE UNIVERSITÄT BERLIN Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

DISPUTATION

Freitag, 20. November 2015, 11.00 Uhr

**Ort: Fachbereich Physik
Seminarraum: T2 (1.4.03), Arnimallee 14, 14195 Berlin**

Disputation über die Doktorarbeit von

Herrn Qiushi Wang

**Thema der Dissertation:
Restart in Mobile Offloading**

**Thema der Disputation:
Performance Evaluation and Improvement in Mobile Offloading System**

Die Arbeit wurde unter der Betreuung von **Prof. Dr. K. Wolter** durchgeführt.

Abstract: Offloading is an advanced technique to improve the performance of mobile devices. By migrating heavy computation from resource constrained thin clients to powerful cloud servers, the processing speed can be accelerated and sometimes battery lifetime can also be prolonged. To guarantee the completion of such offloading tasks, strong connectivity between client and server is essential. However, a wireless network is not always sufficiently stable to provide a reliable communication between clients and servers. Task completion can be delayed by congestion or packet loss in the network, and execution continuity is always interrupted by network failures. To deal with this problem, the quality of network connection should be evaluated regularly.

Restart is an efficient method that can reduce the task completion when the network quality is poor. In mobile offloading systems, besides retrying the same offloading task, jobs can be locally restarted and completed in the client device itself. Adaptively selecting the right option and automatically restarting at the appropriate moment can balance out undesired effects. To evaluate the performance of the restart scheme, SAN (Stochastic Activity Network) modelling is applied for simulation and an Android-based offloading program engine has been developed for experimentation. The talk will discuss proposed solutions and their evaluation using SAN models and experiments.

Die Disputation besteht aus dem o. g. Vortrag, danach der Vorstellung der Dissertation einschließlich jeweils anschließenden Aussprachen.

Interessierte werden hiermit herzlich eingeladen

Die Vorsitzende der Promotionskommission
Prof. Dr. K. Wolter