A U S H A N G

FREIE UNIVERSITÄT BERLIN
Fachbereich Mathematik und Informatik

Promotionsbüro, Arnimallee 14, 14195 Berlin

D I S P U T A T I O N

Montag, 21. März 2016, 13.00 Uhr

NEUER Ort: Seminarraum 049
Institut für Informatik,
FB Mathematik und Informatik, Takustr. 9, 14195 Berlin

Disputation über die Doktorarbeit von

Herrn Norman Rajan Dziengel

Thema der Dissertation:
Distributively Observed Events in Wireless Sensor Networks

Thema der Disputation:
Investigation of Theoretic and Experimental Application of Distributed Event Detection for WSNs

Die Arbeit wurde unter der Betreuung von **Prof. Dr.-Ing. J. Schiller** durchgeführt.

Abstract: Wireless Sensor Networks (WSNs) have significant applicability in various environmental observation tasks. The deployment flexibility and the ability to communicate wirelessly support the multidimensional detection of events in the observed area. WSNs consist of constrained and ideally ambient incorporated devices with limited energy supply and computing power. Hence, the requirement to sustain functionality over a long period while delivering accurate event detection contradicts the properties of WSNs. One approach to resolve this contradiction is to reduce the amount of communication to the base station by applying an in-network based event detection that cooperatively decides at the location of the event whether a notification is necessary or not. In addition, an information fusion that is based on an a priori created reference event description can preserve the global event knowledge.

We will discuss the tradeoff between reduced communication to a dedicated base station in general and the increase of communication caused by in-network based event detection at the event location. By comparing the expected communication efforts of multiple information fusion approaches, we will discuss their applicability to a broad variety of applications. Lessons learned during four real world deployments give us a good insight into the influencing parameters that leverage or reduce the applicability of a distributed event detection in WSNs.

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

Interessierte werden hiermit herzlich eingeladen

Der Vorsitzende der Promotionskommission
Prof. Dr.-Ing. J. Schiller