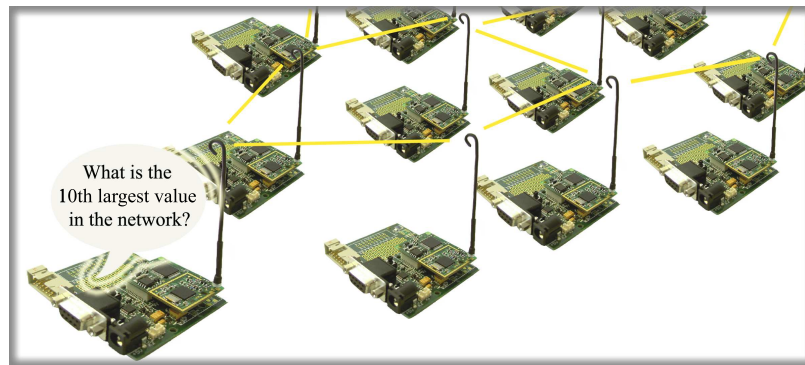


## Master Thesis “Advanced Aggregation in Ad-Hoc Sensor Networks”

Due to the relative ease of deployment, sensor networks are suitable for various monitoring and data collection tasks. In order to make use of the monitored values, these values need be forwarded to a central component, e.g., a powered basestation. Instead of forwarding *all* measurements to the basestation, it is possible for several queries to aggregate the measurements along the path to the basestation which substantially reduces the number of exchanged messages and hence the total power consumption.



Aggregation services for ad-hoc sensor networks capable of answering simple aggregation queries such as “what is the sum/average of all measurements?” or “what is the maximum/minimum value?” have been proposed [1, 2]. In this thesis, the goal is to provide an aggregation service tailored to more sophisticated queries which necessitates the implementation of more powerful algorithms. The main focus will be on the implementation of algorithms to determine the  $k^{\text{th}}$  largest measurement efficiently.

**Requirements** Good programming skills and interest in distributed algorithms.

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