There has been a spectacular increase in the amount of data being collected and processed in many modern applications, and traditional algorithms theory is ill-suited for handling such amount of data. In particular, traditional theory used simplistic machine models which are not suitable for modern computer architectures and applications, and the inadequacy of the simplistic machine models directly translates into deficiencies of software when processing massive data.

In this talk, I will try to address this issue by introducing several successful models for handling massive data. I will highlight the primary features they capture and the central issues we need to explore. I will then focus on one particular model - the distributed streaming model, provide an overview of the important and fundamental problems, and illustrate how to design and analyze efficient algorithms in this model. All these works are strongly motivated by databases, data mining and network applications.

**Speaker Biography**

Qin Zhang is currently a postdoctoral fellow at Center for Massive Data Algorithmics, Computer Science Department, Aarhus University, working with Prof. Lars Arge. He obtained his Ph.D. degree in Computer Science and Engineering from Hong Kong University of Science and Technology in 2010, and his B.Sc. degree in Computer Science from Fudan University in 2006.

His current research interests include algorithms for massive data; data streams; algorithms on distributed data; data structures; external memory algorithms; database algorithms; communication complexity.

**Host: Prof. Bernhard Schmidt, Division of Mathematical Sciences, School of Physical and Mathematical Sciences**