Distributed Computational Frameworks for Big Data Fusion Tasks: Case Studies with Sensor Networks and Smartphones

By

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Topic: With recent progress on sensor networks and mobile computing, large amounts of data have been made available. While data come in many heterogeneous semantic forms, many share in common that they involve location and context information that can be used to infer people’s activities. For example, a vehicle equipped with GPS will generate location sequences associated with timestamps, allowing us to infer when and where the driver has been to. In this talk, we exploit the rich semantics of mass heterogeneous data through a distributed fusion framework, which focuses on providing programming abstractions that enable novel applications to be designed and implemented easily in a wide range of devices. We discuss our programming framework in detail, and also present its case studies in both sensor networks and smartphones with multiple novel instances of applications.

Bio: Dr. Cao is currently an assistant professor in the Department of Electrical Engineering and Computer Science at the University of Tennessee. He got his Ph.D. degree from the University of Illinois in October, 2008, his Master's degree from the University of Virginia, and his Bachelor's degree from Fudan University, China. Dr. Cao is the author and co-author of over 25 papers in premier journals and conferences with over 1100 citations (according to Google Scholar). He is a member of ACM, IEEE, and the IEEE Computer Society.