Surviving the Glut: The Management of Event Streams in Cyberphysical Systems

Alejandro Buchmann

Technische Universität Darmstadt, Deutschland

Short Bio:

Alejandro Buchmann is Professor in the Department of Computer Science, Technische Universität Darmstadt, where he heads the Databases and Distributed Systems Group. He received his MS (1977) and PhD (1980) from the University of Texas at Austin. He was an Assistant/Associate Professor at the Institute for Applied Mathematics and Systems IIMAS/UNAM in Mexico, doing research on databases for CAD, geographic information systems, and object-oriented databases. At Computer Corporation of America (later Xerox Advanced Information Systems) in Cambridge, Mass., he worked in the areas of active databases and real-time databases, and at GTE Laboratories, Waltham, in the areas of distributed object systems and the integration of heterogeneous legacy systems. 1991 he returned to academia and joined T.U. Darmstadt. His current research interests are at the intersection of middleware, databases, event-based distributed systems, ubiquitous computing, and very large distributed systems (P2P, WSN). Much of the current research is concerned with guaranteeing quality of service and reliability properties in these systems, for example, scalability, performance, transactional behaviour, consistency, and end-to-end security. Many research projects imply collaboration with industry and cover a broad spectrum of application domains. Further information can be found at http://www.dvs.tu-darmstadt.de

Talk:

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Abstract:
The widespread deployment of sensors has enabled the development and deployment of many new monitoring and reactive applications. However, the understanding of events, their composition and level of abstraction, the style of processing and the quality of service requirements vary drastically across application domains. The sheer volume of events and the fact that event producers and consumers are decoupled creates new challenges in the deveopment of distributed event based systems. In this talk we survey a broad spectrum of applications and analyze their requirements, the interpretation and processing of events, the required quality of service, and the life cycle of event based applications. Based on this analysis we identify interesting areas of research.

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