

Fast, Real-time Analysis on All Kinds of Data

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***Abstract.** Today's scientific and business processes heavily depend on fast and accurate data analysis. Data scientists are routinely overwhelmed by the effort needed to manage the volumes of data produced. As general-purpose data management software is often inefficient, hard to manage, or too generic to serve today's applications, businesses increasingly turn to specialised data management software, which can only handle one data format, and then resort to data integration solutions. With the exponential growth of dataset size and complexity, however, data format-specific solutions no longer scale for efficient analysis, thereby slowing down the cycle of analysing and understanding the data, and making decisions. I will illustrate the different nature of problems we face when managing heterogeneous datasets, and how these translate to fundamental challenges for the data management community. Then I will introduce RAW, a new solution inspired by these challenges. RAW overturns long-standing assumptions, enables meaningful and timely results, and promotes timely discovery.*

Anastasia Ailamaki is a Professor of Computer and Communication Sciences at the Ecole Polytechnique Federale de Lausanne (EPFL) in Switzerland and the co-founder of RAW Labs SA, a swiss company developing real-time analytics infrastructures for heterogeneous big data. Her research interests are in data-intensive systems and applications, and in particular (a) in strengthening the interaction between the database software and emerging hardware and I/O devices, and (b) in automating data management to support computationally- demanding, data-intensive scientific applications. She has received an ERC Consolidator Award (2013), a Finmeccanica endowed chair from the Computer Science Department at Carnegie Mellon (2007), a European Young Investigator Award from the European Science Foundation (2007), an Alfred P. Sloan Research Fellowship (2005), an NSF CAREER award (2002), and nine best-paper awards in database, storage, and computer architecture conferences,. She holds a Ph.D. in Computer Science from the University of Wisconsin-Madison in 2000. She is an ACM fellow, an IEEE fellow, the Laureate for the 2018 Nemitsas Prize in Computer Science, and an elected member of the Swiss National Research Council. She has served as a CRA-W mentor, and is a member of the Expert Network of the World Economic Forum.