Breaking Big Data Silos: Opportunities and Security Threats

Quando

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Orario

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Luogo

Aula Alfa - Dipartimento di Informatica, Università La Sapienza

Via Salaria, 113- 000198 Roma
Today, companies and government agencies alike have access to more customer information than ever before. Transactional data can provide deep insight into individual customers’ behavior, to be complemented with user profiles, website clickstreams, call center logs and emails, and external data coming from social media. Experience has shown that customer acquisition (attracting new customers), customer life-time value maximization (cross-selling and up-selling to existing customers) and churn prevention (preventing customers from switching to another provider) are expected to work best when tailored to individual customers’ needs. BDA also promises to find innovative ways to reduce risk, e.g. addressing fraud threats without antagonizing regular customers. The overall recipe advertised by vendors for enabling BDA-driven innovation is breaking down the IT “silos”, bringing data from different departments together into a common representation and a single source of knowledge. However, adopting a “silos-breaking” data fusion strategy can itself be a source of risk and regulatory compliance headaches. Pulling out and merging data from various sources for analytics may increase the number of replicas of sensitive data items, and increase the likelihood of data leakages or inference attacks. Also, it may make it difficult to avoid violations of custody obligations and usage constraints on the original data. The talk will provide a threat/opportunity analysis of data preparation and fusion strategies, highlighting the research issues to be handled in order to enable a risk-aware approach to data-driven innovation.

Relatore: Ernesto Damiani
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Ernesto Damiani is currently Director of the Information Security Research Center at Khalifa University of Technology, Abu Dhabi. He is the leader of the Big Data Initiative at the Etisalat British Telecom Innovation Center (ETIC). Ernesto is on extended leave from the Department of Computer Science, Università degli Studi di Milano, Italy, where he leads the SESAR research lab (http://sesar.di.unimi.it) and has served the Head of the Ph.D. Program in Computer Science for many years. Ernesto's research interests include secure cloud-based architectures, privacy-preserving Big Data analytics and Cyber-Physical Systems security. Ernesto holds/has held visiting positions at a number of international institutions, including George Mason University in Virginia, US, Tokyo Denki University, Japan, LaTrobe University in Melbourne, Australia, and the Institut National des Sciences Appliquées (INSA) at Lyon,
France. He is a Fellow of the Japanese Society for the Progress of Science. He is/has been Principal Investigator in a number of large-scale research projects funded by the European Commission, the Italian Ministry of Research and by private companies such as British Telecom, Cisco Systems, SAP, Telecom Italia, Siemens Networks (now Nokia Siemens) and many others. Currently, he is the Principal Investigator of the Toreador H2020 project investigating models and architectures for Big Data as a services. Ernesto serves in the editorial board of several international journals; among others, he is the EIC of the International Journal on Big Data and of the International Journal of Knowledge and Learning. He is Associate Editor of IEEE Transactions on Service-oriented Computing and of the IEEE Transactions on Fuzzy Systems. Ernesto is a senior member of the IEEE and served as Vice-Chair of the IEEE Technical Committee on Industrial Informatics. In 2008, Ernesto was nominated ACM Distinguished Scientist and received the Chester-Sall Award from the IEEE Industrial Electronics Society. Ernesto has co-authored over 350 scientific papers and many international patents and books, including "Open Source Systems Security Certification" (Springer 2009).

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