

ASHISH KAMRA

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EDUCATION

Doctorate of Philosophy (Computer Engineering)

Expected: Aug 2009

Purdue University, West Lafayette, IN

Dissertation: Mechanisms for Database Intrusion Detection and Response

Advisor: Elisa Bertino and Guy Lebanon

Bachelor of Engineering in Electronics

Jul 2001

Regional Engineering College, Nagpur, India

RESEARCH WORK

Database Intrusion Detection and Response

Aug 2004 - cur

The goal of the doctoral thesis is to develop architectures, mechanisms and algorithms for a DBMS equipped with activity monitoring, intrusion detection and response capabilities. Main contributions:

- Profiles that succinctly represent user/application behavior interacting with a DBMS
- Efficient algorithms for online detection of anomalous database user/application behavior
- Novel strategies and mechanisms for responding to intrusions in context of a DBMS
- Implementation of the system in PostgreSQL DBMS

k-Anonymization Using Clustering Techniques

Nov 2005 - Nov 2006

- Address the problem of *k*-anonymizing micro datasets using novel clustering mechanisms
- Objective: To minimize the information loss introduced due to the anonymization process while maintaining the utility of the anonymized dataset

PUBLICATIONS

Ashish Kamra, Evimaria Terzi, Elisa Bertino. "Detecting Anomalous Access Patterns in Relational Databases". The International Journal on Very Large Data Bases (VLDB Journal), 2008.

Elisa Bertino, *Ashish Kamra*, Evimaria Terzi, Athena Vakali. "Intrusion Detection in RBAC-Administered Databases". In Proceedings of Annual Computer Security Applications Conference (ACSAC), 2005.

Ashish Kamra, Elisa Bertino, Rimma Nehme. "Responding to Anomalous Database Requests". In Proceedings of Secure Data Management Workshop (SDM), 2008.

Ashish Kamra. "Mechanisms for Database Intrusion Detection and Response". In Proceedings of the SIGMOD PhD Workshop on Innovative Database Research (IDAR), 2008.

Elisa Bertino, *Ashish Kamra*, James Early. "Profiling Database Applications to Detect SQL Injection Attacks". In Proceedings of the Performance, Computing, and Communications Conference (IPCCC), 2007.

Ji-Won Byun, *Ashish Kamra*, Elisa Bertino and Ninghui Li. "Efficient *k*-anonymity Using Clustering Techniques". In Proceedings of International Conference on Database Systems for Advanced Applications (DASFAA), 2007.

Mercan Topkara, *Ashish Kamra*, Mike Atallah and Cristina Nita-Rotaru. "ViWiD: Visible Watermarking Based Defense Against Phishing". In Proceedings of the International Workshop on Digital Watermarking (IWDW), 2005.

Elisa Bertino, Ji-Won Byun, *Ashish Kamra*. "Database Security". Security, Privacy and Trust in Modern Data Management, Chapter 7.

WORK EXPERIENCE

Database Administrator

Feb 2007 - present

IT Services and Operations, Purdue University, West Lafayette, IN

- Managing SQL Server 2000/2005 databases including user management, back-up, recovery, auditing etc
- Evaluation of third-party products for database security and vulnerability assessment
- Formulating security best practices for Oracle and SQL Server databases

Summer Intern

May 2007 – Aug 2007

Rainfinity, EMC Corp, Santa Clara, CA

- Implemented a Role-Based Access Control (RBAC) system in Rainfinity's suite of products
- Static code analysis through Fortify and Coverity products

Assistant Systems Engineer

Aug 2001 - Jul 2004

Tata Consultancy Services (TCS), Hyderabad, India

- Secretariat Knowledge and Information Management System (SKIMS) : A workflow cum document management system for a state secretariat.
 - Member of the core technical team in SKIMS
 - Technologies: Lotus Notes R5/R6, Lotus Domino Server and Oracle 9i.
- CEO's Mailbox: TCS internal project to create a customized mail architecture for CEO's office mailbox
 - Project lead for a team of 4 developers
 - Technologies: Lotus Notes R5/R6, Lotus Domino Server
- Worked on various RFPs in capacity of a technology expert

Teaching Assistant, CS 541: Database Systems

Aug 2006 - Dec 2006

Computer Science Department, Purdue University, West Lafayette, IN

- Prepared and graded homeworks and exams
- Assigned projects on various topics in database security
- Guest Lecture on "Intrusion Detection in Databases"

OTHER ACTIVITIES

- Conducted risk assessment for Indiana State Department of Health as part of course-work
- Proceedings editor for the ACM SPRINGL 2008 workshop to be held in Irvine, CA
- Reviewer for various top peer-reviewed conferences and journals
- Treasurer of the IEEE student's chapter in 1999
- Member of the organizing committee for Expressions 99, a national level technical symposium in India.
- Class X school topper with 91.6%
- Class XI school topper with 89%
- Active participant in various sports such as cricket, badminton, table-tennis, volleyball and so forth

REFERENCES

Available on request