

Advancements in Privacy Preserving Data Mining

Overview

Data mining has played a vital role in numerous application domains, including marketing, financial data analysis, medical and biological research, crime investigation and intrusion detection. Data mining techniques have been extensively used in both centralized and distributed data environments. However, it is widely recognized that data mining may pose a threat to security and especially privacy, as it may be possible to reveal sensitive information of individuals or other entities through use of data mining techniques. For example, in distributed data environment, data mining may enable involving parties to reveal each other's sensitive information that was not intended to be shared. As data mining has spread into business, government, security systems and other areas, the need to insure that privacy is not jeopardized has grown and intensified. Privacy preserving data mining is an emerging and fast growing area of research that has attracted many theoreticians and practitioners from industry, universities and government organizations. It has necessitated development of new techniques, as well as adaptation of approaches stemming from other areas, including cryptography, key management, secure computation, optimization and cheater detection, to fulfill its unique requirements.

This course focuses on fundamental concepts of privacy that distinguish it from security, privacy laws and regulations, privacy quantification, its motivation and challenges posed by the diversity of privacy threats, and various attack and privacy models. It gives an overview and analysis of privacy preserving data publishing approaches, rule hiding techniques and privacy preserving distributed mining methods with special emphasis on future directions. This course then guides the participants through advancements in privacy preserving data mining including privacy preserving stream data mining and social network analysis, which will help them to acquire skills to work in this challenging and highly pursued area, applied to different domains. Finally, current trends in privacy preserving data mining are discussed with their challenges and needs. The primary focus of this course is on the fundamentals of privacy and implementation of privacy preserving techniques in data mining through hands-on tutorials.

Modules	<p>A: Introduction to Privacy: December 19, 2016</p> <p>B: Attack Models, Privacy Models and Privacy Metrics: December 20 - 22, 2016</p> <p>C: Sensitive Values/Rule Hiding Approaches: December 23 - 24, 26 2016</p> <p>D: Privacy Preserving Distributed Data Mining: December 27 - 28, 2016</p> <p>E: Advancements in Privacy Preserving Data Mining: December 29, 2016</p> <p style="text-align: center;"><i>Number of participants for the course will be limited to fifty.</i></p>
You Should Attend If...	<ul style="list-style-type: none"> ▪ you are an executive, engineer and researcher from industry and government organizations, including R&D laboratories interested in learning of PKI and Trust Management, a growing area of information security ▪ you are a student at all levels (B.Tech/M.Sc/M.Tech/Ph.D) or Faculty from the reputed academic institutions interested in pursuing research in PKI and Trust Management
Fees	<p>The participation fees for taking the course is as follows:</p> <p>Participants from abroad : US \$400</p> <p>Industry participants: Rs. 12000/-</p> <p>Academic /Research Organizations: Rs. 2,000/- (Student) & Rs. 8000/- (Others)</p> <p style="text-align: center;">(For SC/ST students, 50% fee is waived)</p> <p>The above fee includes all instructional materials, computer use for tutorials and assignments, laboratory equipment usage and Internet facility.</p>

The Faculty



Professor Ljiljana Brankovic has been working for over 20 years at the School of Electrical Engineering and Computer Science, Faculty of Engineering and Built Environment, The University of Newcastle, Australia. Her research expertise includes Statistical Disclosure Control, Privacy Preserving Data Mining, Algorithms and Complexity, and Graph Theory. She has published more than 88 articles in prestigious international journals and conferences.

Professor Brankovic has received Four teaching awards (Vice Chancellor's Award 2014, two FEBE award, 2008 and 2013, and an Engineers Australia Award 2004), two award nominations and six commendations. She has received around \$1,456,330 as research funding and \$195,070.25 as teaching grants and awards from different funding bodies.

She has been an invited speaker at several Australasian and international conferences, an Editor of special issues of a journal and several conference proceedings, Chair or PC member of a number of Australasian and international Conferences and special sessions at international conferences, Elected Fellow of Institute of Combinatorics and its Applications, Canada, and Elected Life Member of the Combinatorial Mathematics Society of Australasia. She served as the Chair of National Committee of Computer Security of Australian Computer Society and has collaborated with over 30 researchers from around the world.



Dr. Modi Chirag Navinchandra is an Assistant Professor of Computer Science and Engineering at National Institute of Technology Goa. His research interest includes Information Security and Privacy, Cryptography, Cloud Security, Network Security, Intrusion Detection and Privacy Preserving Data Mining.

He has received the Young scientist award (2015) by VIFRA, Chennai. He holds Best Paper Award (2015), from JNCA, Elsevier, San Diego, USA.



Dr. Keshavamurthy B. N. is working as an Assistant Professor in the Department of Computer Science and Engineering, National Institute of Technology Goa, India. His research interests include Privacy preserving mining, Stream mining and Social network analysis.



Dr. Pravati Swain is working as an Assistant Professor in the Department of Computer Science and Engineering, National Institute of Technology Goa, India. Her research interests include Analysis of high-speed communication networks, Virtual Data Center, Wireless network, Mobile computing, Stochastic process, Formal Verification.

Location:



National Institute of Technology Goa
Farmagudi, Ponda, Goa-403401, India

Course Duration:

Two Weeks: December 19-29, 2016

Course Coordinator

Principal Coordinator

Dr. Modi Chirag Navinchandra

Contact: 0832-2404212/ 09423918821

E-mail: cnmodi@nitgoa.ac.in

Co-Coordinator

Dr. Keshavamurthy B. N.

Contact: 0832-2404212/ 09164440252

E-mail: bnkeshav.fcse@nitgoa.ac.in

Course Registration Link:

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