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Colorado State University's
Information Science and Technology Center (ISTeC)

presents two lectures by

Ravi Sandhu

Executive Director

Institute for Cyber Security

University of Texas at San Antonio

ISTeC Distinguished Lecture

In conjunction with the
Electrical and Computer Engineering Department
and Computer Science Department

"Security and Trust Convergence: Attributes, Relations and Provenance"

Monday, September 15, 2014
Reception with refreshments: 10:30 am
Lecture: 11:00 am – 12:00 noon
Location: Grey Rock, Lory Student Center



Computer Science Department and Electrical and Computer
Engineering Department Special Seminar Sponsored by ISTE C

"Attribute Based Access Control Model"

Tuesday, September 16, 2014
Lecture: 2:00 pm – 3:00 pm
Location: ~~Room-325, Computer Science~~
ANAZO W118

ISTeC (Information Science and Technology Center) is a university-wide organization for promoting, facilitating, and enhancing CSU's research, education, and outreach activities pertaining to the design and innovative application of computer, communication, and information systems. For more information please see ISTeC.ColoState.EDU.

Abstracts

Security and Trust Convergence: Attributes, Relations and Provenance

Security and trust are interdependent concepts which need to converge to address the cyber security needs of emerging systems. This talk will lay out a vision for this convergence. We argue that security and trust are inherently dependent on three foundational concepts: attributes, relations and provenance. Security researchers have dealt with these three concepts more or less independently. In the future convergence of these three is required to achieve meaningful cyber security. The talk will speculate on some research and technology challenges and opportunities in this respect.

Attribute Based Access Control Model

This talk will review recent developments in attribute-based access control (ABAC). The ongoing authorization leap from rights to attributes offers numerous compelling benefits. Decisions about user, subject, object and context attributes can be made relatively independently and with suitable decentralization appropriate for each attribute. Policies can be formulated by security architects to translate from attributes to rights. Dynamic elements can be built into these policies so the outcomes of access control decisions automatically adapt to changing local and global circumstances. On the benefits side this leap is a maturation of authorization matching the needs of emerging cyber technologies and systems. On the risks side devolving attribute management may lead to attributes of questionable provenance and value, with attendant possibility of new channels for social engineering and malware attacks. We argue that the potential benefits will lead to pervasive deployment of attribute-based access control, and more generally attribute-based security. The cyber security research community has a responsibility to develop models, theories and systems which enable safe and chaos-free deployment of ABAC. This is a current grand challenge for access control researchers.

Speaker Biography

Ravi Sandhu is Executive Director of the Institute for Cyber Security at the University of Texas at San Antonio, where he holds the Lutcher Brown Endowed Chair in Cyber Security. Previously he was on the faculty at George Mason University (1989-2007) and Ohio State University (1982-1989). He holds BTech and MTech degrees from IIT Bombay and Delhi, and MS and PhD degrees from Rutgers University. He is a Fellow of IEEE, ACM and AAAS, and has received awards from IEEE, ACM, NSA and NIST such as the IEEE Computer Society's Technical Achievement Award in 2004, the ACM SIGSAC Outstanding Contribution Award (2008) and the ACM SIGSAC Outstanding Innovation Award. A prolific and highly cited author, his research has been funded by NSF, NSA, NIST, DARPA, AFOSR, ONR, AFRL and private industry. His seminal papers on Role-based Access Control established it as the dominant form of access control in practical systems. His numerous other models and mechanisms have also had considerable real-world impact. He is Editor-in-Chief of the IEEE Transactions on Dependable and Secure Computing, and founding General Chair of the ACM Conference on Data and Application Security and Privacy. He previously served as founding Editor-in-Chief of ACM Transactions on Information and System Security and on the editorial board for IEEE Internet Computing. He was Chairman of ACM SIGSAC, and founded the ACM Conference on Computer and Communications Security and the ACM Symposium on Access Control Models and Technologies and chaired their Steering Committees for many years. He has served as General Chair, Program Chair and Committee Member for numerous security conferences. He has consulted for leading industry and government organizations, and has lectured all over the world. He is an inventor on 29 security technology patents. At the Institute for Cyber Security he leads multiple teams conducting research on many aspects of cyber security including secure information sharing, social computing security, cloud computing security, secure data provenance and botnet analysis and detection, in collaboration with researchers all across the world.

To arrange a meeting with the speaker, please contact Indrajit Ray, Indrajit.Ray@ColoState.EDU, 970-491-7097.