Distinguished Lecturer Series "Leon the Mathematician" at the Department of Informatics, Aristotle University of Thessaloniki Greece (http://dls.csd.auth.gr)

INVITED LECTURE

Dr. Sudip Misra (Assistant Professor, School of Information Technology, Indian Institute of Technology, Kharagpur), who is currently an Alexander von Humboldt Fellow, is going to lecture on

Jamming in Wireless Sensor Networks

at the **Auditorium of the Central Library** of the Aristotle University of Thessaloniki **on Monday April 4th, 2011 at 11:30.**

ABSTRACT

One of the large-scale prospective applications of wireless sensor networks is their deployment for surveillance by the military; but the same is not being done widely due to their extreme vulnerability to jamming attacks. Detection of jamming and its discrimination from other types of radio-link deteriorations, especially as applicable to wireless sensor networks, is a challenging problem; and as such, only few solutions exist. However, the existing solutions are not suitable for information warfare as they are node-centric, taxing the resource-starved nodes which they can ill-afford, particularly while under a jamming attack.

The speaker will talk about the problem of jamming in wireless sensor networks, with focus on military applications. He will then specifically talk about some of his works done with his colleagues and students in regard to jamming attack detection and jammed area mapping in wireless sensor networks.

Publications

S. Misra, R. Singh, and S. V. R. Mohan, "Information Warfare-Worthy Jamming Attack Detection Mechanism for Wireless Sensor Networks Using Fuzzy Inference System", *Sensors*, vol. 10, no. 4, pp. 3444-3479, 2010; doi:10.3390/s100403444.

S. Misra, P. V. Krishna, K. I. Abraham, N. Sasikumar, and S. Fredun, "An Adaptive Learning Routing Protocol for the Prevention of Distributed Denial of Service Attacks in Wireless Mesh Networks," Computers and Mathematics with Applications, vol. 60, no. 2, pp. 294-306, 2010; doi:10.1016/j.camwa.2009.12.035.

S. Misra, P. V. Krishna, and K. I. Abraham, "Adaptive Link State Routing and Intrusion Detection in Wireless Mesh Networks", *IET Information Security*, vol. 4, no. 4, pp. 379-384, December 2010; doi:10.1049/iet-ifs.2009.0196.

S. Misra, P. V. Krishna, and K. I. Abraham, "A Simple Learning Automata-Based Solution for Intrusion Detection in Wireless Sensor Networks", *Wireless Communications and Mobile Computing*, doi: 10.1002/wcm.946.

S. Misra, R. Singh, and S. V. R. Mohan, "Geomorphic Zonalization of Wireless Sensor Networks Based on Prevalent Jamming Effects", *IET Communications*.

About the Speaker:

Dr. Sudip Misra
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Dr. Sudip Misra is an Assistant Professor in the School of Information Technology at the Indian Institute of Technology Kharagpur. At present, he is in Germany as an Alexander von Humboldt Fellow. Prior to this he was associated with Cornell University (USA), Yale University (USA), Nortel Networks (Canada) and the Government of Ontario (Canada). He received his Ph.D. degree in Computer Science from Carleton University, in Ottawa, Canada, and the master and bachelor degrees from the University of New Brunswick, Fredericton, Canada, and the Indian Institute of Technology, Kharagpur, India, respectively. Dr. Misra has several years of experience working in the academia, government, and the private sectors in research, teaching, consulting, project management, architecture, software design and product engineering roles.

His current research interests include algorithm design for emerging communication networks. Dr. Misra is the author/editor of over 100 scholarly research papers. He has won six research paper awards in different conferences. He was also the recipient of several academic awards and fellowships such as the Young Scientist Award (National Academy of Sciences, India), Young Systems Scientist Award (Systems Society of India), Young Engineers Award (Institution of Engineers, India), (Canadian) Governor General's Academic Gold Medal at Carleton University, the University Outstanding Graduate Student Award in the Doctoral level at Carleton University and the National Academy of Sciences, India – Swarna Jayanti Puraskar (Golden Jubilee Award). He was also awarded the Canadian Government's prestigious NSERC Post Doctoral Fellowship and the Humboldt Research Fellowship in Germany. Dr. Misra is the Editor-in-Chief of the International Journal of Communication Networks and Distributed Systems (IJCNDS), Inderscience Publishers, U.K. He has also been serving as the Associate Editor of the Telecommunication Systems Journal (Springer SBM), Security and Communication Networks Journal (Wiley), International Journal of Communication Systems (Wiley), and the EURASIP Journal of Wireless Communications and Networking. He is also an Editor/Editorial Board Member/Editorial Review Board Member of the IET Communications Journal, Computers and Electrical Engineering Journal (Elsevier), the International Journal of Internet Protocol Technology, the International Journal of Theoretical and Applied Computer Science, the International Journal of Ad Hoc and Ubiquitous Computing, Journal of Internet Technology, and the Applied Intelligence Journal (Springer). Dr. Misra has edited around 6 books in the areas of wireless ad hoc networks, wireless sensor networks, wireless mesh networks, communication networks and distributed systems, network reliability and fault tolerance, and information and coding theory, published by reputed publishers such as Springer and World Scientific. He was invited to chair several international conference/workshop programs and sessions. He has been serving in the program committees of over a dozen international conferences. Dr. Misra was also invited to deliver keynote lectures in over a dozen international conferences in USA, Canada, Europe, Asia, and Africa.