

# **CYBER SECURITY TRENDS AND TECHNOLOGIES**

*14<sup>th</sup> – 18<sup>th</sup> May 2018, Department of CSE, IIT Patna*

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## Overview

As organisations and users increasingly rely upon distributed applications, online services and network infrastructures for assessing information and making critical business decisions, the topic of cyber security has become extremely significant. Over the last two decades, attacks on computer and network systems have transitioned from rare incidents to ubiquitous events. Hence securing distributed applications and networks and their management have become a necessity and a core part of any business whether it is in industry or government. With the developments in online services and social media, security affects every part of day to day lives.

**Objectives:** The primary objectives of the course are to:

1. Expose participants to cybersecurity concepts and advanced security techniques.
2. Expose participants to different types of security attacks in networks and systems
3. Enhancing the capability of participants to design of secure systems and networks, and to appreciate the various design choices
4. Expose participants to practical problems, solutions and standards in cyber security

<b>Modules</b>	<b>Course Duration:</b> : 14-18 May, 2018 <b>This course will cover following topics:</b> <ol style="list-style-type: none"><li>1. Technology Scenery and Cyber Security Trends</li><li>2. Security Threat Modelling and Risk Analysis</li><li>3. Software and Network Attacks</li><li>4. Security Development Process and Security Architecture</li><li>5. Cryptographic Techniques</li><li>6. Security Protocols and Distributed Authentication Service</li><li>7. Security Models</li><li>8. Distributed Authorization Service Design</li><li>9. System Security Architecture</li><li>10. Cloud Security</li><li>11. Internet Security:</li><li>12. Trusted Computing Technologies</li></ol>
<b>You Should Attend If...</b>	<ul style="list-style-type: none"><li>▪ You are an executive/ engineer/ researcher from manufacturing, service and government organizations including R&amp;D laboratories.</li><li>▪ You are a student at all levels (BTech/MSc/MTech/PhD) or Faculty from reputed academic institutions and technical institutions.</li></ul>
<b>Fees</b>	The participation fees for taking the course is as follows: <b>Participant from abroad: US \$200</b> <b>Not-for-profit R&amp;D and Educational Institutions: Rs. 2000/-</b> <b>Industry/ Research Organizations: Rs. 2000/-</b> <b>Academic Institutions (Full time students): Rs. 1000/-</b> <b>Note: The course fee will be made half for SC/ST students.</b> The above fee includes all instructional materials, computer use for tutorials and assignments, laboratory equipment usage charges, free internet facility in the campus. The participants will be provided with accommodation and food on payment basis.

## The Faculty



**Prof. Vijay Varadharajan** is now the Global Innovation Chair in Cyber Security at the University of Newcastle. Before he was Professor and Microsoft Chair in Innovation in Computing at Macquarie University (2001 - to March 2017). He was also the Director of Advanced Cyber Security Research Centre (ACSRC). Before this he was Dean/Head of School of Computing and IT at University of Western Sydney (1996-2000). He was a member of Strategic Research Priorities Committee (Cyber Security), Office of the Chief Scientist of Australia (2015). Previously he has acted as an Expert in Security for the European Union and for the UK Dept. of Trade and Industry. Vijay was a member of the Australian Research Council (ARC) ARC College of Experts in Engineering, Mathematics and Informatics in 2011 for 3 years.

Prof. Vijay has published more than 400 papers in International Journals and Conferences, has co-authored and edited 10 books on Information Technology, Security, Networks and Distributed Systems and have held 3 patents. His research work over the years has contributed to the development of several successful secure commercial systems in the areas of Secure Distributed Applications, Secure Network Systems, Security Tools, Secure Mobile Systems as well as Cryptographic and Smart Card based Systems and secure financial, telecom and medical solutions. He is an Editorial Board member of several journals including the prestigious ACM Transactions on Information System Security (TISSEC) (USA), IEEE Transactions on Dependable and Secure Systems (TDSC), IEEE Transactions in Information Forensics and Security (TIFS), IEEE Transactions in Cloud Computing (TCC) (USA), International Journal of Information Security, Springer (Germany), Computer and Communication Security Reviews (UK) as well as IEEE Security and Privacy. His research work has been supported by industry such as Microsoft, Hewlett-Packard, British Telecom and Fujitsu, as well as government agencies such Australian Research Council (ARC), UK Research Council (EPSRC), Australian Defense (DSD), Dept of Prime Minister and Cabinet Australia and European Union (COST, EUREKA, ESPRIT, RACE, INFOSEC EU and 7th Framework).

He is a Fellow of the British Computer Society (FBCS), a Fellow of the IEE, UK (FIEE), a Fellow of the Institute of Mathematics and Applications, UK (FIMA), a Fellow of the Australian Institute of Engineers (FIEAust) and a Fellow of the Australian Computer Society (FACS). More details in <https://www.newcastle.edu.au/profile/vijay-varadharajan>.



**Dr. Somanath Tripathy** is currently the Associate Professor of Computer Science and Engineering Department at Indian Institute of Technology Patna. He was the Associate Dean (Academic), IIT Patna during (2016-17). His current research includes Lightweight Cryptography, Computer and network security, Security and privacy issues in IoT and Cloud Systems. He has published more than 45 papers in International Journals and Conferences. More details in <https://www.iitp.ac.in/~som>.

### Course Coordinators/ Host Faculties

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