

CSCS 508 : Big Data Analytics in Cybersecurity

UNIT I

Applying Big data into different Cybersecurity aspects : The Power of Big Data in Cybersecurity, Big Data for Network Forensics, Dynamic Analytics-Driven Assessment of Vulnerabilities and Exploitation, Root Cause Analysis for Cybersecurity, Data Visualization for Cybersecurity, Cybersecurity Training. (12 hours)

UNIT II

Machine Unlearning: Repairing Learning Models in Adversarial Environments, **Big data in emerging cybersecurity domains :** Big Data Analytics for Mobile App Security, Security, Privacy, and Trust in Cloud Computing, Cybersecurity in Internet of Things (IoT), Big Data Analytics for Security in Fog Computing . (12 hours)

UNIT III

Analyzing Deviant Socio-Technical Behaviors Using Social Network Analysis and Cyber Forensics-Based Methodologies, **Tools and Datasets for Cybersecurity : Security Tools, Data and Research Initiatives for Cybersecurity Analysis.** (12 hours)

TextBooks:

- (1). “Big Data Analytics in Cybersecurity”, Onur Savas, Julia Deng, CRC Press, 2017
- (2). “Data Analytics and Decision Support for Cybersecurity”, Iván Palomares Carrascosa, Harsha Kumara Kalutarage, Yan Huang, Springer, 2017
- (3). “Darkweb Cyber Threat Intelligence Mining”, John Robertson, Ahmad Diab, Ericsson Marin, Eric Nunes, Vivin Paliath, Jana Shakarian, Paulo Shakarian, Cambridge University Press, 2017
- (4). “Data Analysis for Network Cyber-Security”, Niall Adams, Nicholas Heard, Imperial College Press, 2014