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| Module:                  | <b>Privacy and Anonymity in the Internet</b>  |
| Lecturer:                | Prof. Dr.-Ing. habil. Peter Sobe  |
| Language:                | English   |
| Teaching Method:         | Lecture and tutorial with demonstration   |
| Credit Points:           | 1 ECTS  |
| Attendance requirements: | Basic knowledge of computer networks  |
| Goals / Skill:           | This lecture provides insights how personal data is collected during Internet usage and how this information can be misused. After discussing non-technical issues of observability and privacy, a number of techniques are introduced used to collect and analyze data that compromise the user's privacy. To protect privacy, rules for a responsible usage of the Internet are suggested. In addition, students get to know infrastructures und cryptographic techniques to act and communicate in an anonymous way.   |
| Detailed Content:        | <p>1: Introduction and Definitions: observation, privacy, pseudonymisation, anonymity, relation to digital identity</p> <p>2: Observation and analytics techniques: access logging, packet sniffing, cookies, browser fingerprinting, JavaScript techniques</p> <p>3: Personal data protection and cryptographic anonymity techniques: content and address encryption, general anonymity principles, sender and receiver anonymity techniques, MIX, onion router (TOR)</p>  |
| Media Used:              | Electronic Presentation, Blackboard Illustrations, Practical Demonstrations   |
| Literature:              | <p>Selected for further reading:</p> <p>P. Eckersly:<br/>How unique is your web browser?. Proceedings of the Privacy Enhancing Technologies Symposium (PETS 2010), Springer Lecture Notes in Computer Science.<br/>(<a href="http://panopticlick.eff.org">http://panopticlick.eff.org</a>)</p> <p>D. Kesdogana, C. Palmer:<br/>Technical challenges of network anonymity. Computer Communications, Volume 29, Issue 3, 1 February 2006, Pages 306-324 Internet Security</p> <p>R. Dingledine, N. Mathewson, P. Syverson:<br/>Tor: The Second-Generation Onion Router. Proceedings of the 13th Usenix Security Symposium, 2004</p> |
| Assigned Tutorials:      | <p>Tutorial 3: Observation, Analytics and Anonymity Techniques</p> <ul style="list-style-type: none"> <li>Understand the tracking and observation techniques, to provide knowledge on countermeasures and to sensitize to possible use and misuse</li> </ul> <p>Tutorial 4: Cracking</p> <ul style="list-style-type: none"> <li>Learning the possibilities with penetration test tools to gather security relevant information of a dedicated server system</li> </ul>  |