GOETHE UNIVERSITÄT FRANKFURT AM MAIN

DIGITAL SECURITY

THE THREAT ECOSYSTEM AND CYBER DEFENSE

MASTER SEMINAR | GOETHE UNIVERSITY FRANKFURT | SUMMER 2019 | DR. GÖKHAN BAL

TODAYS AGENDA

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- Recap: Topics & Groups
- Recap: Organizational
- Scientific Working Essentials
- Questions & Answers / Group Discussions

PRACTICAL TIP

HAVEIBEENPWNED.COM

CHECK IF YOU HAVE AN ACCOUNT THAT HAS BEEN COMPROMISED IN A DATA BREACH

TOPIC OVERVIEW

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1 Threat Ecosystem

- Who are the threat actors?
- What are their Motivations?
- What are their strategies, Tactics and techniques?
- How is the cybercrime ecosystem organized?
- What are major hacks and cyber attacks?

2 Social Engineering

- What is Social Engineering?
- What are techniques of Social Engineering?
- What are famous examples and players of SA?
- How to protect against social engineering?

3 Human Resistance

- What is the „Human Factor“ of Security?
- How is the human the „weakest link“ of security?
- What are methods to increase human resistance against cyber attacks?
- Design of a small security awareness campaign

4 Mach[illegible] Vuln[illegible]ability

- What are [illegible]ch[illegible]al vulnerabilities?
- What is the [illegible] of vulns in cyber attacks / hacks?
- What meth[illegible]ist to increase machine resistance against cyber att[illegible]ks?
- What [illegible] bug bo[illegible] program?

5 Cyber Defense

- What are [illegible]rganizati[illegible]l measures for cyber defense?
- What is a SO[illegible]T / CSIRT?
- What is Securit[illegible]onitoring, Threat Hunting and Incident [illegible]e?
- What is Thr[illegible]ntell[illegible]nce?
- What is a Red Team Attack?

ORGANIZATIONAL - DATES

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- 15.04.19, 10:00 – 14:00 — Kick-Off | HoF E.01 (Dt. Bank)
- 14.05.19: 10:00 – 14:00 — scientific working essentials / Q&A
- ~~24.06.19: 10:00 – 18:00 — Presentations (Day 1) | RuW 2.202~~
- 25.06.19: 10:00 – 16:00 — Presentations ~~(Day 2)~~ | RuW 2.202
- 07.07.19: 23:59:59 (CEST) — Paper Submission (via e-mail)

You are here

ORGANIZATIONAL - PRESENTATIONS

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- Present the essentials of your topics
- You chose the format (pptx, Flipchart, Quiz, Dialogues, Role playing, Mix,…)
- Interactivity
- Minimal „talk“
- No need to submit upfront
- Evaluation of group performance
- Weight: 40%

Organizational – Paper

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- Submission of a scientific paper
- Format: Word or compatible
- length: ca. 30 pages (without Appendices, indices and references)
- Evaluation criteria: Content, Format, language, References, Quality of citations (scientific criteria)
- Statement about individual contributions
- Submission (Final): 08.07.19, 12:00 (CEST)
  - via e-mail to mail@goekhanbal.de
  - one printed copy to m-chair office 2.257 RuW (Elvira Koch)
- Weight: 60%

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SCIENTIFIC WORKING ESSENTIALS

Scientific Working Essentials – Literature Search (1/2)

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- Goals:
  - Knowing what is already known: the knowledge base of your topic
  - Knowing the concepts relating to your topic
  - Identify knowledge gaps / new research questions
  - Find support for your assumptions / hypotheses
  - Making a systematic literature review

Scientific Working Essentials – Literature Search (2/2)

- Sources:
  - For first overview: Google / Google Scholar
  - University library website (EBSCOHost, JSTOR,…)
  - Start with "intuitive" set of search terms
  - Optimize search terms based on literature
- Paper Recommendation: vom Brocke J. et al. (2009) Reconstructing the Giant: On the Importance of Rigour in Documenting the Literature Search Process. Proc. Eur. Conf. Inf. Syst.

Scientific Working Essentials – Literature Management

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- Use Literature Management Tools
- Recommendation: Mendeley (Free)
  - Client for Windows and MacOS
  - Web-based access
  - File Organizer (incl. automatic naming)
  - Importer Plug-in
  - Citation Plug-In for Word
  - Organize Literature in Groups

Scientific Working Essentials – Citation and Reference List

- Consistent use of Citation Scheme
- Preferred style: APA (American Psychological Association) 6th Edition
- Example: Egelman, S., Cranor, L. F., & Hong, J. (2008). You've Been Warned: An Empirical Study of the Effectiveness of Web Browser Phishing Warnings. In *Proceeding of the twenty-sixth annual CHI conference on Human factors in computing systems - CHI '08* (p. 1065). New York, New York, USA: ACM Press. https://doi.org/10.1145/1357054.1357219

Scientific Working Essentials – Writing

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- Be Objective, factual and precise
- Provide support for statements / facts from literature (citations)
- Provide high entropy statements
- Stick with widely accepted terms / concepts
- Write rather short sentences than nested constructions
- Provide good introductions to topic

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QUESTIONS AND ANSWERS