Kick-off Seminar: Intrusion Detection Systems

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Outline

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Organization

- Familiarize with the research topic (Intrusion Detection Systems)
- Literature research in your topic
- Deep into your individual topic
- Students Talk
Goal of Seminar

• Learn how IDSs detect malicious activities
• Another look at NIDSs with high cost of errors
• How to address the challenges in NIDS
• Use machine learning to solve some challenges
  • Detection
  • Analysis
  • Making conclusions, countermeasures
Seminar Topics

• Network Intrusion Detection Systems (NIDS)
  • Machine Learning based
  • Signature based
  • Hybrid based

• IDS for Industrial Control System (ICS)
  • e.g. Stuxnet, Havex, Industroyer, APT attacks

• Feature Selection in NIDS
Prerequisites

• MSc students of Informatics or similar
• Basics of IT security
• Machine Learning/Data Mining – very beneficial
• English speaking skills :)

Intrusion Detection Systems | Chair for IT Security
Student Assignments

• Presentation (paper/s) + Report (papers)
• Pick 2 papers as a topic from the list (which will be published later in the course homepage\(^1\)), or propose papers
• 1 paper used for a seminar presentation (20' + 10' discussion)
• Write a report about both paper topics (14 pages LNCS format)
• You have to write the report on your own words, direct copy and paste will be determined as a plagiarism!

\(^1\) https://www.sec.in.tum.de/i20/teaching/ss2019/intrusion-detection-systems
Literature Research

• Students highly recommend to search similar literature for their report and specially their talk paper

• Goal of relevant literatures:
  • Find, understand and explain main:
    • Arguments
    • Approaches
    • Techniques
Literature Research & Sources

- http://scholar.google.com/
- http://dblp.uni-trier.de/
- http://citeseer.ist.psu.edu/
- http://portal.acm.org/
- http://www.springerlink.com/
- http://www.computer.org/
- You can access to the majority of literatures by Shibboleth Authentication or using Library webpage:
  - https://eaccess.ub.tum.de
Grading

• Grading consist of different parameters:
  • Report (60%)
  • Presentation (30%)
  • Participation and discussion (10%)
    • Almost neglected!
Time Table

- 29.01.19 – Kick-off Meeting
- 23.04.19 – Introduction, Rules and Division of papers
- 28.05.19 – Students Presentation
- 04.06.19 – Students Presentation
- 11.06.19 – Students Presentation
- 18.06.19 – Students Presentation
- 25.06.19 – Students Presentation
- 02.07.19 – Students Presentation
How to Apply?

• Attend the Kick-Off

• Send a short CV to:
  • norouzian@sec.in.tum.de until 07.02.19

• Register on the matching system
  • look up http://docmatching.in.tum.de/

• If you cannot use the matching system for some reason, let me know!
Contact

• For any questions, ask now or contact me later:
  • norouzian@sec.in.tum.de