

Offensive and Defensive Measures in Wireless  
Security — WS 2022/23  
Seminar

Maximilian von Tschirschnitz &  
Ludwig Peuckert

Lehrstuhl für Sicherheit in der Informatik / I20  
Prof. Dr. Claudia Eckert  
Technische Universität München

July 19, 2022

# What is this seminar about?

- ▶ **Offensive** measures in wireless communication:
  - ▶ Interception
  - ▶ AIR-FI
  - ▶ Jamming and Mimicking
  - ▶ Tracking
- ▶ **Defensive** measures in wireless communication:
  - ▶ Privacy preserving features
  - ▶ Proximity

# Process

- ▶ Phase **I**: Select a **topic**
- ▶ Phase **II**: Find **literature**
- ▶ Phase **III**: Do your **reading / experiments / programming**
- ▶ Phase **IV**: **Writing** phase I
- ▶ Phase **V**: **Peer review**
- ▶ Phase **VI**: **Writing** phase II
- ▶ Phase **VII**: Final **talks**

Exact schedule will be published once list of participants is known.

# Phase I

1. We will provide you with a list of **our topics of interest**
2. You will **choose / propose** your own topic and either:
  - ▶ Work out the offensive / defensive measures
  - ▶ Reproduce the results of an existing conference paper
  - ▶ Create your own Systematization of Knowledge (SoK) paper
3. In all cases, you will put your work into context of existing literature
  - ▶ e.g at Usenix Security Symposium, S&P, ACM CCS, NDSS

# Some Topics of Interest

- ▶ Overshadowing (LTE)
- ▶ BLE Privacy
- ▶ Payment Systems
- ▶ Software Defined Radios/Frameworks
- ▶ Jamming and Mimicking
- ▶ Wireless Positioning
- ▶ Key Agreement in Peer-to-Peer Wireless Networks
- ▶ And many more
- ▶ **Plus:** provide us with your own topic proposal!

# Registration

- ▶ Registration using the **matching system**
- ▶ **No** letter of motivation
- ▶ approx. **15** slots

# Time and Place

- When?** Tuesdays 16:00 - 18:00 roughly Bi-Weekly
- ① Some meetings will be canceled or replaced
  - ② First meeting in the first lecture week
  - ③ First task before first meeting

Talks at the **end** of the semester

**Where?**





# Time and Place

**When?** Tuesdays 16:00 - 18:00 roughly Bi-Weekly

- ① Some meetings will be canceled or replaced
- ② First meeting in the first lecture week
- ③ First task before first meeting

**Where?** Talks at the **end** of the semester  
Seminartagungsstätte Frauenchiemsee  
**Disclaimer:** Only if participants show interest!  
Fallback: On-campus conference

# Grading

|      |  |
|------|--|
| 40 % | Final Paper (Content, Style, Language, Scope, ...) |
| 10 % | Practical application (depends on topic)           |
| 10 % | Review   |
| 30 % | Presentation (Content, Style, Timeliness, ...)     |
| 10 % | Discussion   |

---

$\Sigma$  100 % Total

# Questions?

Contact us at  
maximilian.tschirschnitz@sec.in.tum.de,  
peuckert@sec.in.tum.de

[https://www.sec.in.tum.de/i20/teaching/ws2022/  
offensive-and-defensive-measures-in-wireless-security](https://www.sec.in.tum.de/i20/teaching/ws2022/offensive-and-defensive-measures-in-wireless-security)