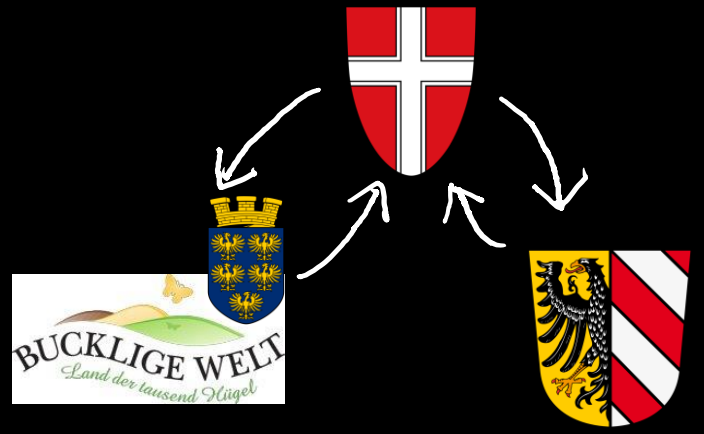
Web (and) Application Security

WUAPS

whoami

Daniel Schwarz
lbschwarzd@fhstp.ac.at



Education:

Prof. Exp.:

Who are you?

Hacking webapplications is illegal

(https://www.oesterreich.gv.at/themen/bildung_und_neue_medien/internet_und_handy___sicher_durch_die_digitale_welt/3/Seite.1720213.html)

But it's also fun!

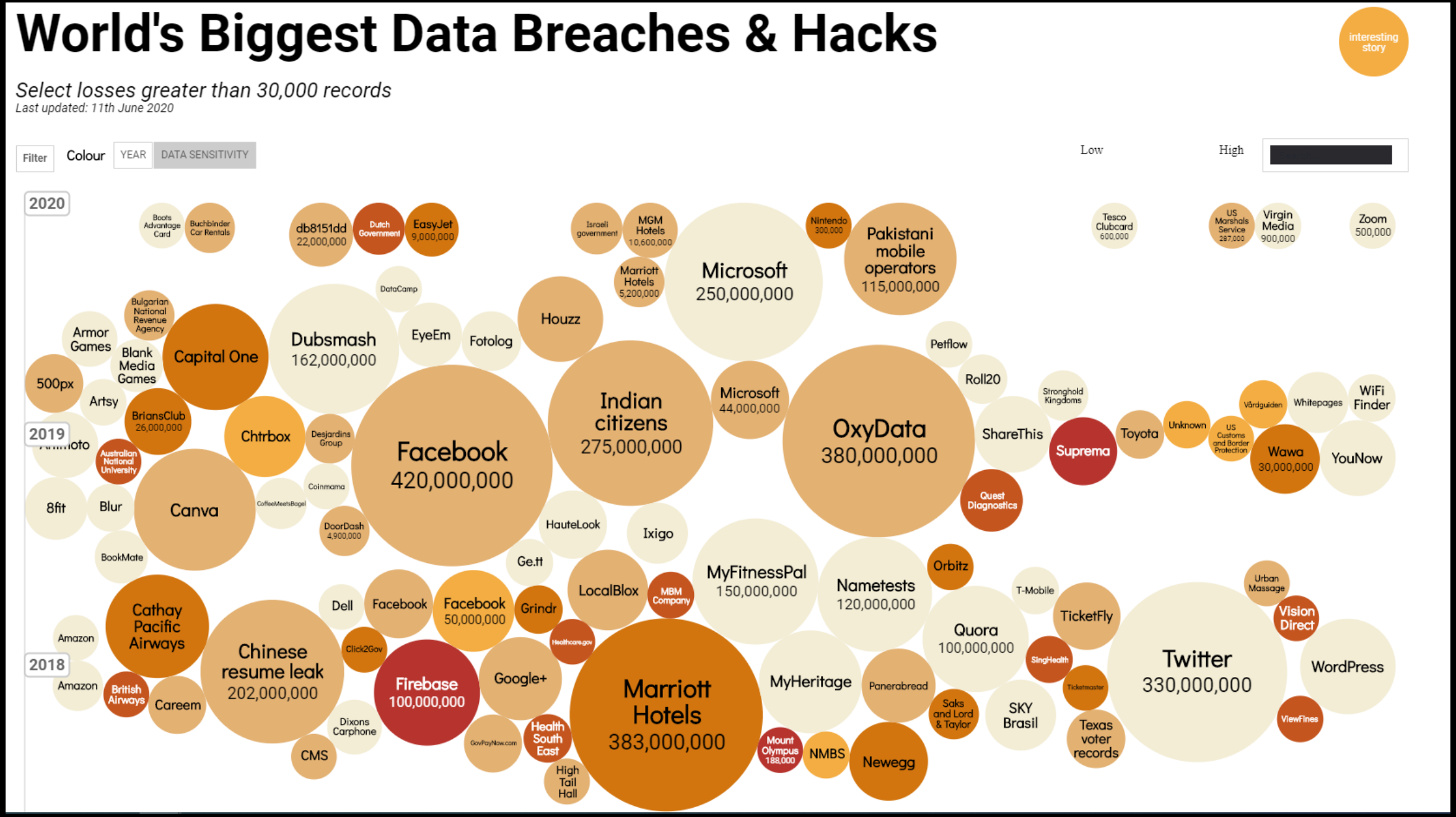
just become a whitehat and get legally paid for it

and help making the internet a safer place

Why is web (application) security important?

World's Biggest Data Breaches & Hacks

Select losses greater than 30,000 records
Last updated: 11th June 2020



Source: https://informationisbeautiful.net/visualizations/worlds-biggest-data-breaches-hacks/

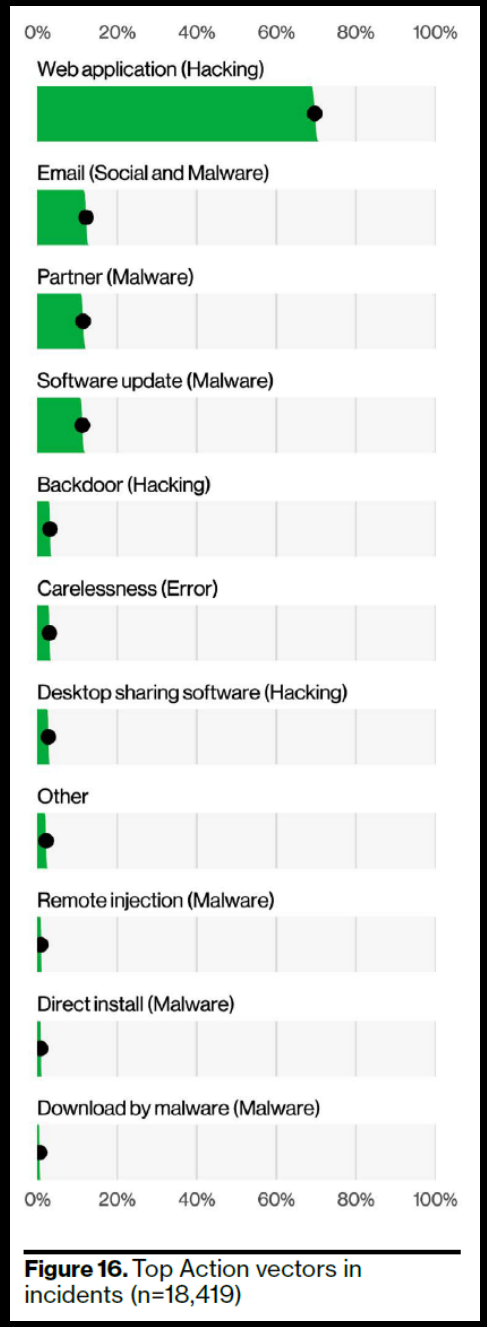


Figure 16. Top Action vectors in incidents (n=18,419)

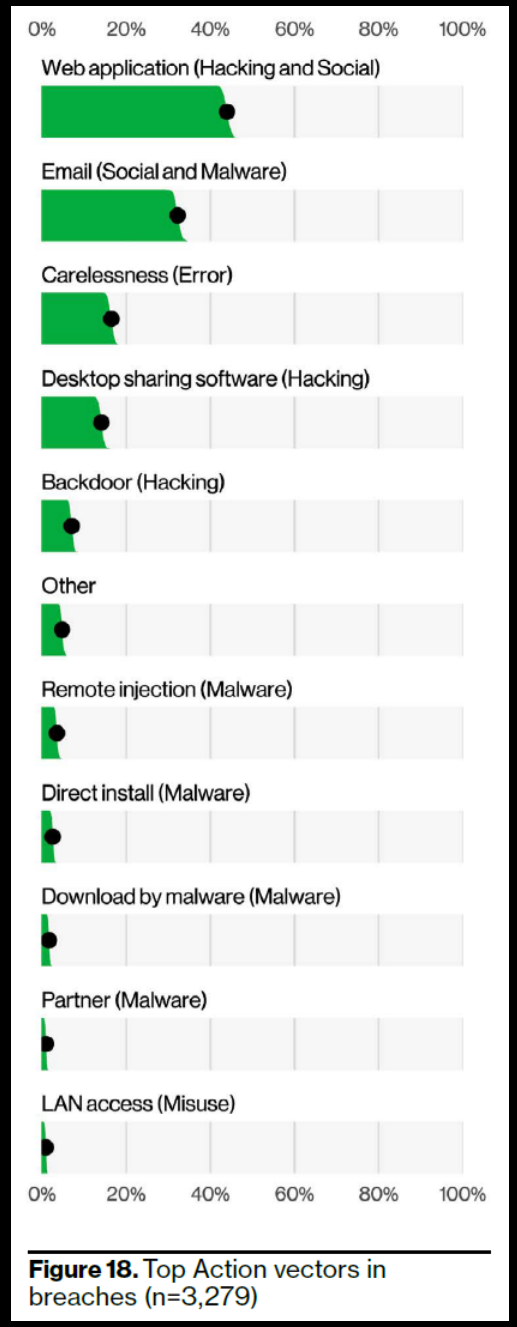


Figure 18. Top Action vectors in breaches (n=3,279)

Incident: A security event that compromises the integrity, confidentiality or availability of an information asset.

Breach: An incident that results in the confirmed disclosure – not just potential exposure – of data to an unauthorized party.

Source: Verizon 2022 Data Breach Investigation Report

Why is it so hard to do it right?
= secure

The web is a complex combination of different technologies which evolved over time

You have to care about:

server-side code
gets untrusted input

browser
runs different applications at the same time

client-side code
runs in an untrusted environment

the user
well... we all know them…

Rough Overview

1. >> Introduction <<
2. Basic Principles and Resources
3. Architecture & Basic Web Procedure
4. Authentication and Session Management
5. Authorization
6. Server and Backend Attacks
7. Remaining Client Attacks
8. General Topics
9. Conclusions

Overall Conditions

- Grading
  - 50% Lab
    - more about that in the first lab session
  - 50% Theory
    - eCampus exam at the end of this course
    - You need to collect more than 25 of 50 points for a positive grade
- Attendance
  - Needs to be recorded on eCampus
- Breaks
- Camera
- Recording
- Material
  -
  - https://github.com/dschwarz91/websec-lecture

After this course, you will be able to...

… explain the most common vulnerabilities in today‘s web applications

… identify vulnerabilities in web applications and give recommendations how to fix them

… use some of the most important tools to efficiently examine web applications

Any questions before we start?