

Projektgruppe, Sommersemester 2026

GDPR-SCAN: Analyzing website privacy compliance to the GDPR at scale

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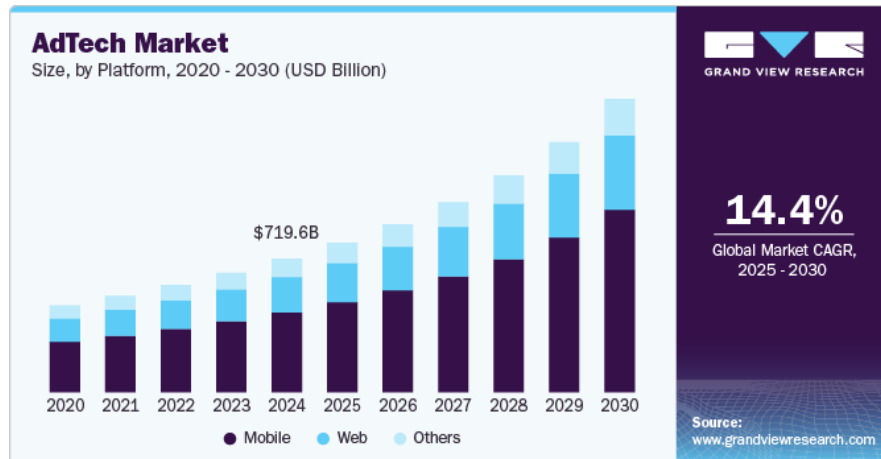
Fakultät für Informatik
Arbeitsgruppe Systemsicherheit <https://www.syssec.wiwi.uni-due.de/>

Ubiquitous Tracking on the Web

- Cookies
- Advertising ID
- Other identifiers, like ...
 - hardware
 - browser extensions
 - software versions

Advertising market

- User data gathered by trackers powers the global advertisement technology (AdTech) market
- Total size of AdTech market in 2024: ~720 billion USD
 - Steady growth projected until at least 2030
- Tracking data can be used to ...
 - undermine your anonymity in any online activity
 - raise prices for online shop users who were identified to have more disposable income



But do websites actually comply?

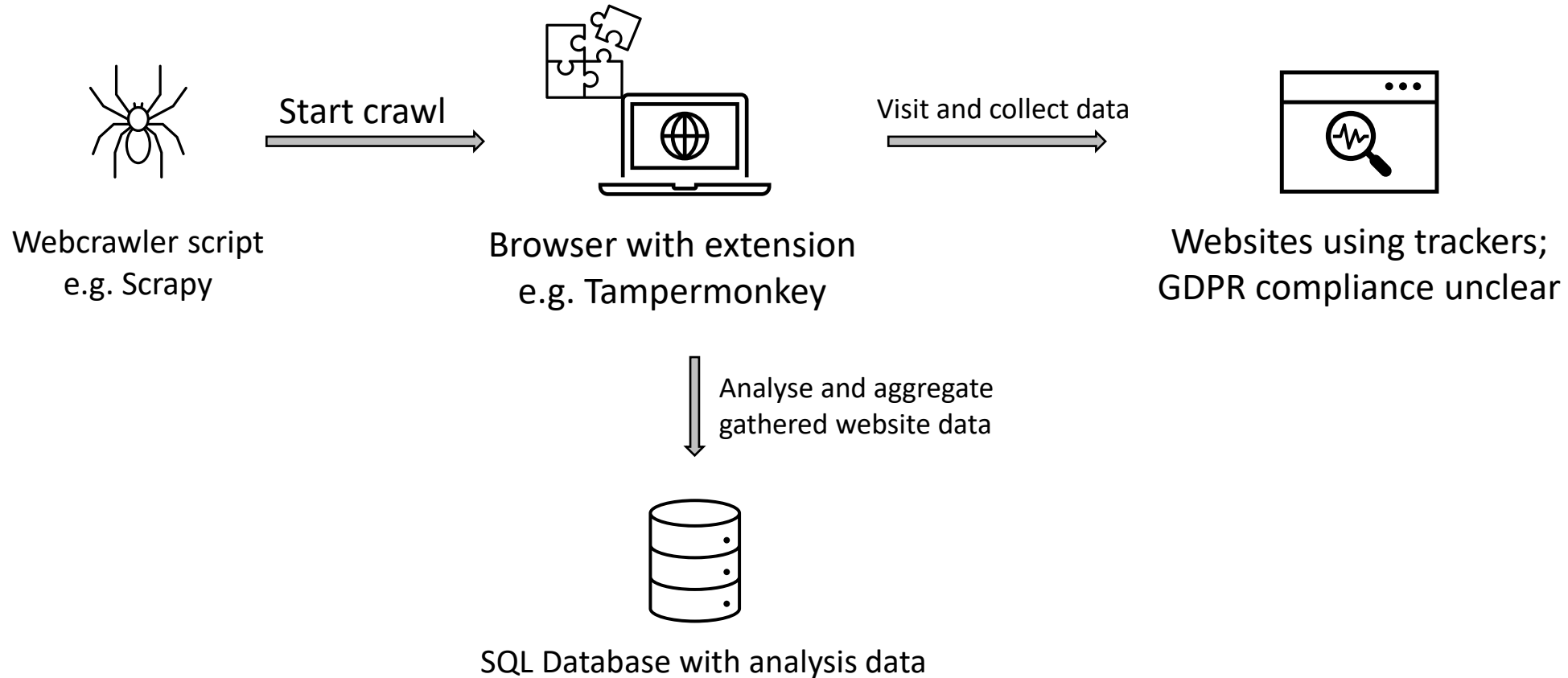
1.2 billion euro fine for Facebook as a result of EDPB binding decision

22 May 2023 EDPB

- Companies are changing policy, sometimes to the detriment of users
 - E.g. Google lifting a former ban on device fingerprinting and non-user-resettable trackers on their platform in February of 2025
- Illegal collection & processing of data violates GDPR article 83
 - No user consent: €20 million fine or 4% annual turnover if greater
- Regulatory agencies cannot keep up with rapidly evolving technology
- So, do they comply?



How we will determine the scope of this problem



Project goals and learning outcomes

- Tracking techniques and GDPR
 - Students identify common tracking techniques and evaluate them against existing GDPR regulations regarding consent and profiling
- Detection tooling in browser
 - Leverage browser extensions and/or modify browser to add capabilities for detection of GDPR compliance
 - Gain experience in working with browsers and interpreting web telemetry
- Webcrawler for data collection
 - Design, build, and operate a scalable web crawler using the detection tooling, or expand an existing crawler to meet this goal
 - Learn how to engineer, monitor, and debug large-scale measurement infrastructure
- Data aggregation and analysis
 - Aggregate, clean, and statistically analyse the collected tracking data
 - Practice large-scale data handling and quantitative evaluation
- We will use JavaScript, C/C++, Python, SQL, and JSON for data representation.

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Supervisor: Tristan Löding, Martin Herrmann

First Meeting: 13.04.2026 13 - 15 Uhr in SGW-007