

One-Page Research Summary

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Topic: Ad Blockage on YouTube – Information Security Perspective

- Users install ad blockers to protect privacy, reduce unwanted visual content, avoid tracking, and defend against malicious advertisements.
- Ad blockers function as an information security tool by preventing malvertising, blocking harmful scripts, and reducing unauthorized data collection.
- Research indicates that more than 40 percent of global internet users rely on ad-blocking technologies.
- YouTube's use of Server-Side Ad Insertion (SSAI) merges advertisements directly into the video stream, making traditional filter-based blockers ineffective.
- Advertisers increasingly use techniques such as HTML and CSS obfuscation, randomized element IDs, and anti-adblock detection scripts to bypass blockers.
- Machine learning-based tools, such as CV-INSPECTOR, use differential execution analysis and achieve more than 90 percent accuracy in identifying ad-block circumvention techniques.
- Economic studies show that although ad blocking reduces publisher revenue, it has minimal or no negative impact on consumer welfare, product prices, or search time.
- Legal reviews show that courts generally support a user's right to block ads, strengthened by privacy regulations such as GDPR and CCPA.
- Research recommends treating ad blockers as essential security controls and emphasizes the need for automated, machine-learning-driven detection systems to counter evolving ad delivery methods.