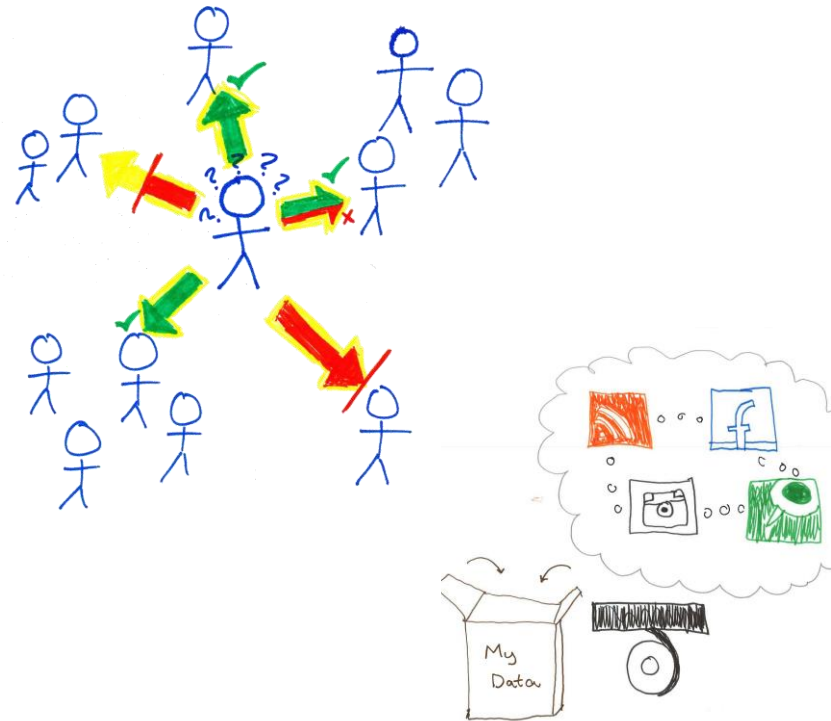


25. Ethics and Privacy



Blase Ur and David Cash
March 6th, 2020
CMSC 23200 / 33250



THE UNIVERSITY OF
CHICAGO

CVEs

Common Vulnerabilities and Exposures (CVEs): Common identifiers explaining infosec vulnerabilities in released software

The screenshot shows the NIST NVD interface for CVE-2017-5754. The header includes the NIST logo, 'Information Technology Laboratory', 'NATIONAL VULNERABILITY DATABASE', and 'NVD'. A green 'VULNERABILITIES' button is visible. The main content area is titled 'CVE-2017-5754 Detail'. It features a 'MODIFIED' section stating the vulnerability has been modified since last analyzed. Below this is the 'Current Description' section, which describes a side-channel analysis of the data cache in microprocessors. The 'Source' is listed as MITRE, with a link to 'View Analysis Description'. A 'Severity' section shows 'CVSS Version 3.x' and 'CVSS Version 2.0' tabs. The 'CVSS 3.x Severity and Metrics' section displays a 'Base Score' of 5.6 MEDIUM and a 'Vector' of CVSS:3.0/AV:L/AC:H/PR:L/UI:N/S:C/C:H/I:N/A:N. A 'QUICK INFO' sidebar on the right provides additional details: 'CVE Dictionary Entry: CVE-2017-5754', 'NVD Published Date: 01/04/2018', and 'NVD Last Modified: 04/23/2019'.

NIST Information Technology Laboratory **NATIONAL VULNERABILITY DATABASE** **NVD** **VULNERABILITIES**

CVE-2017-5754 Detail

MODIFIED

This vulnerability has been modified since it was last analyzed by the NVD. It is awaiting reanalysis which may result in further changes to the information provided.

Current Description

Systems with microprocessors utilizing speculative execution and indirect branch prediction may allow unauthorized disclosure of information to an attacker with local user access via a side-channel analysis of the data cache.

Source: MITRE
[+View Analysis Description](#)

Severity CVSS Version 3.x CVSS Version 2.0

CVSS 3.x Severity and Metrics:

NIST: NVD **Base Score:** 5.6 MEDIUM **Vector:** CVSS:3.0/AV:L/AC:H/PR:L/UI:N/S:C/C:H/I:N/A:N

QUICK INFO

CVE Dictionary Entry: CVE-2017-5754
NVD Published Date: 01/04/2018
NVD Last Modified: 04/23/2019

References to Advisories, Solutions, and Tools

By selecting these links, you will be leaving NIST webspace. We have provided these links to other web sites because they may have

Responsible Disclosure

One should notify impacted vendors/manufacturers of security flaws before notifying the public to permit the creation of patches

For example, Google Project Zero has a 90-day embargo period on disclosing vulnerabilities

Spectre and Meltdown waited 7 months to disclose (and had a coordinated release date... though some journalists jumped the gun)

Bug Bounty

Company offers money for disclosing previously unknown vulnerability

Amounts from hundreds of \$ to tens of thousands of \$+

Participating companies include Google, Facebook, Mozilla, Reddit, Microsoft, and many others

Compare to the Computer Fraud and Abuse Act (CFAA) of 1986, making unauthorized access to a computer illegal

Went after Robert Morris, Aaron Swartz, Anonymous, etc.

Compare to Digital Millennium Copyright Act (DMCA) of 1998, which prohibits reverse-engineering devices

Went after Geohot and others

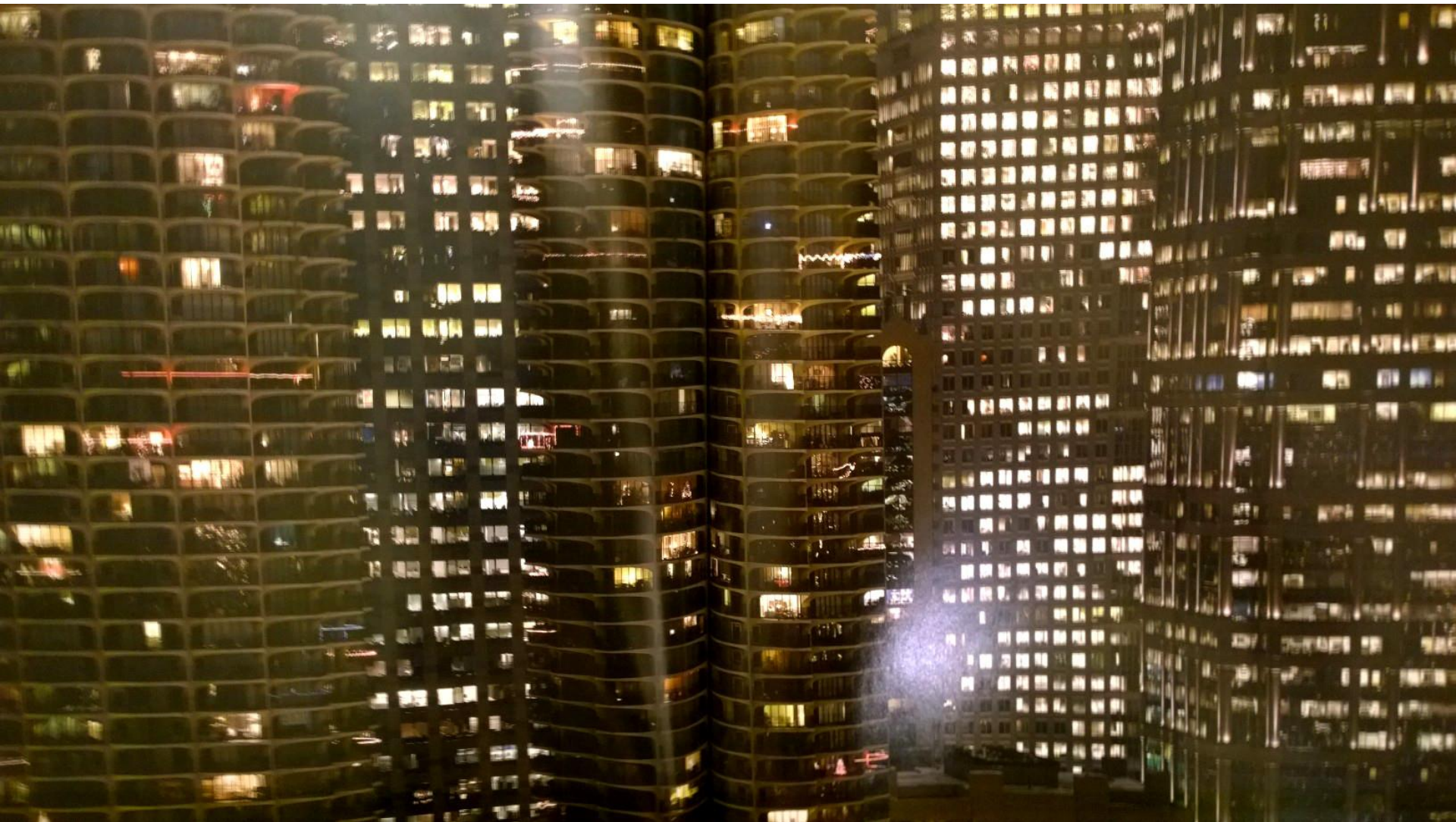
Conceptualizing & Measuring Privacy

Privacy is Hard to Define

“Privacy is a value so complex, so entangled in competing and contradictory dimensions, so engorged with various and distinct meanings, that I sometimes despair whether it can be usefully addressed at all.”

Robert C. Post, Three Concepts of Privacy,
89 Geo. L.J. 2087 (2001).

Michael Wolf- The Transparent City



Michael Wolf- The Transparent City



“Chicago has recently undergone a surge of new construction...In early 2007, the Museum of Contemporary Photography...invited Michael Wolf as an artist-in-residence....Wolf chose to photograph the central downtown area, focusing on issues of voyeurism and the contemporary urban landscape....his details are fragments of life—digitally distorted and hyper-enlarged—snatched surreptitiously via telephoto lenses

<http://aperture.org/shop/the-transparent-city/>



Michael Wolf- The Transparent City



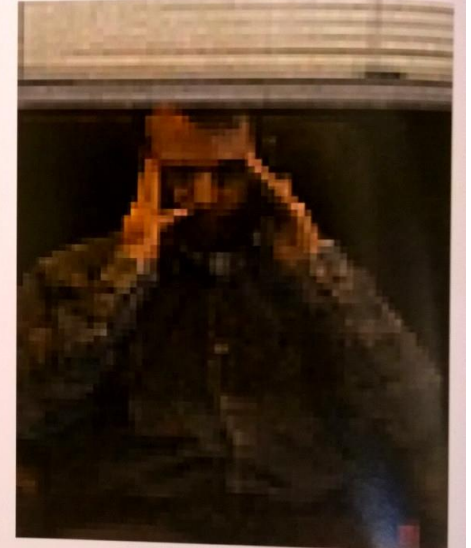
Michael Wolf- The Transparent City



Michael Wolf- The Transparent City



Michael Wolf- The Transparent City



Warren and Brandeis (1890)



HARVARD
LAW REVIEW.

VOL. IV. DECEMBER 15, 1890. NO. 5.

THE RIGHT TO PRIVACY.

“It could be done only on principles of private justice, moral fitness, and public convenience, which, when applied to a new subject, make common law without a precedent; much more when received and approved by usage.”

WILLES, J., in *Millar v. Taylor*, 4 Burr. 2303, 2312.

THAT the individual shall have full protection in person and in property is a principle as old as the common law; but it has been found necessary from time to time to define anew the exact nature and extent of such protection. Political, social, and economic changes entail the recognition of new rights, and the common law, in its eternal youth, grows to meet the demands of society. Thus, in very early times, the law gave a remedy only

Warren and Brandeis's Inspiration



Warren and Brandeis's Argument

- “The individual shall have full protection in person and in property”
- The legal basis for fear
 - Battery → assault
 - Tangible property → intangible property
- Gossip pages about high society

Warren and Brandeis's Argument

- Libel and slander are insufficient in considering only damage to reputation
- Considers property rights
- The right to prevent, rather than profit from, publication
- “The right to be let alone”
- Excludes topics of general interest

Photography Laws

| Consent required for action related to a picture of a person in a public place (by country) | | | |
|---|--------------------------|--------------------------------------|---|
| Country | Take a picture | Publish a picture | Commercially ¹ use a published picture |
| Afghanistan | No | Yes (with exceptions) | Yes (with exceptions) |
| Argentina | No | Yes (with exceptions) | Yes (with exceptions) |
| Australia | No (with exceptions) | No (with exceptions) | Yes |
| Austria | No | No (with exceptions) | Yes |
| Belgium | No | Yes (with exceptions) | Yes |
| Brazil | Yes | Yes | Yes |
| Bulgaria | No | No | Yes |
| Canada | Depends on province | Yes (with exceptions) | Yes |
| China | No | No | Yes |
| Czech Republic | Yes (with exceptions) | Yes (with exceptions) | Yes (with exceptions) |
| Denmark | No | Yes (with exceptions) | Yes (with exceptions) |
| Ethiopia | No | Yes (with exceptions) | Yes |
| Finland | No | Yes (with exceptions) | Yes (with exceptions) |
| France | Yes (with exceptions) | Yes (with exceptions) ^[3] | Yes |
| Germany | No (with exceptions) | Yes (with exceptions) | Yes (with exceptions) |
| Greece | No | No | Yes (with exceptions) |
| Hong Kong | Depends on circumstances | Depends on circumstances | Depends on circumstances |
| Hungary | Yes (with exceptions) | Yes (with exceptions) | Yes (with exceptions) |
| United Kingdom | Depends on circumstances | Depends on circumstances | Depends on circumstances |
| United States | No | No | Usually (although laws differ by state) |

Is Being “Let Alone” Sufficient?

“Every secret of a writer's soul, every experience of his life, every quality of his mind, is written large in his works.”

~ Virginia Woolf



Learn More >

Technology

Apple employee detained by U.S. customs agents after declining to unlock phone, laptop



Customs and Border Protection officers violated a citizen's rights when they demanded he turn over passwords to his electronic devices at the airport, the American Civil Liberties Union Foundation of Northern California said in a civil complaint filed Tuesday. (Daniel Acker/Bloomberg)

By **Hamza Shaban**

April 3

When Andreas Gal returned from a business trip in Sweden last fall, he was carrying two company-owned devices: an iPhone XS that flashed “Confidential and Proprietary” on its lock screen and a MacBook Pro bearing a sticker that read “PROPERTY OF APPLE. PROPRIETARY.”



AT&T Business

Problem solving solved with iPhone and iPad.

LEARN MORE

Apple at Work

CHICAGO IS TRACKING KIDS WITH GPS MONITORS THAT CAN CALL AND RECORD THEM WITHOUT CONSENT

Cook County has a new contract for juvenile ankle monitors that critics say are an invasion of privacy.

This story was co-published with [Citylab](#).

On March 29, court officials in Chicago strapped an ankle monitor onto Shawn, a 15-year-old awaiting trial on charges of armed robbery. They explained that the device would need to be charged for two hours a day and that it would track his movements using GPS technology. He was told he would have to be given permission to leave his house, even to go to school.

Privacy as Control / Secrecy (1967)

“Privacy is the claim of individuals, groups or institutions to determine for themselves when, how, and to what extent information about them is communicated to others.”

“...each individual is continually engaged in a personal adjustment process in which he balances the desire for privacy with the desire for disclosure and communication....”



Is Limiting Access Sufficient?

- Individuals sometimes prefer to be let alone, yet sometimes want to be social
 - Privacy was traditionally “social withdrawal”

Privacy Regulation Theory (1975)

- Irwin Altman (social psychology)
 - Preceded by Altman and Taylor's Social Penetration Theory (1973) about intimacy in relationships
- Dialectic and dynamic process of boundary regulation
 - Continuous movement on a continuum
- Goal: optimum balance of privacy and social interaction



CPM Theory (1991)

- Sandra Petronio (communications)
 - Communication Privacy Management Theory
- Regulate boundaries based on perceived costs and benefits
 - Movement on a continuum
- Expect rule-based management
- Boundary turbulence related to clashing expectations



Is Regulating Disclosure Enough?



Purpose Matters

The Washington Post

Local

Patients trusted Johns Hopkins gynecologist who allegedly videotaped them

By **Brigid Schulte** and **Peter Hermann** February 19, 2013 [Email the author](#)

For more than two decades, women came to see Johns Hopkins gynecologist Nikita Levy and trusted him with not only the most private parts of their bodies but also with their innermost secrets. Listening to problems with husbands and boyfriends, the joys and frustrations of motherhood, Levy was a caring confidant, said patients and co-workers.

On Tuesday, they were reeling from [the news](#) that their doctor had committed suicide after being accused of surreptitiously videotaping and photographing many of his patients. Police said they have removed nearly 10 image-filled computer hard drives from Levy's home in Towson, Md.

(Details)

- “For 25 years, Dr. Nikita Levy ran an obstetrics and gynecology practice out of the East Baltimore Medical Center, a community clinic run by the Johns Hopkins Hospital and Health System. Last February, Johns Hopkins authorities discovered that Levy had been secretly filming his patients in the examination room, using cameras embedded into pens that he wore around his neck and key fobs he carried in his pockets. At his home, police found hard drives and servers stocked with thousands of videos and photographs of his patient’s naked bodies, snapped under the auspices of performing routine pelvic examinations.”

Purpose Matters (?)



Privacy as Contextual Integrity (2004)

- Helen Nissenbaum (philosophy)
- “Contextual integrity ties adequate protection for privacy to norms of specific contexts, demanding that information gathering and dissemination be appropriate to that context.”



Privacy as Contextual Integrity

- Appropriate flows of information
- Appropriate flows conform to contextual information norms
- Norms refer to the data subject, sender, recipient, information type, and transmission principle
- Conceptions of privacy evolve over time and are grounded in ethics