



Haojian Jin

# Bio

Haojian Jin (<http://haojianj.in/>)

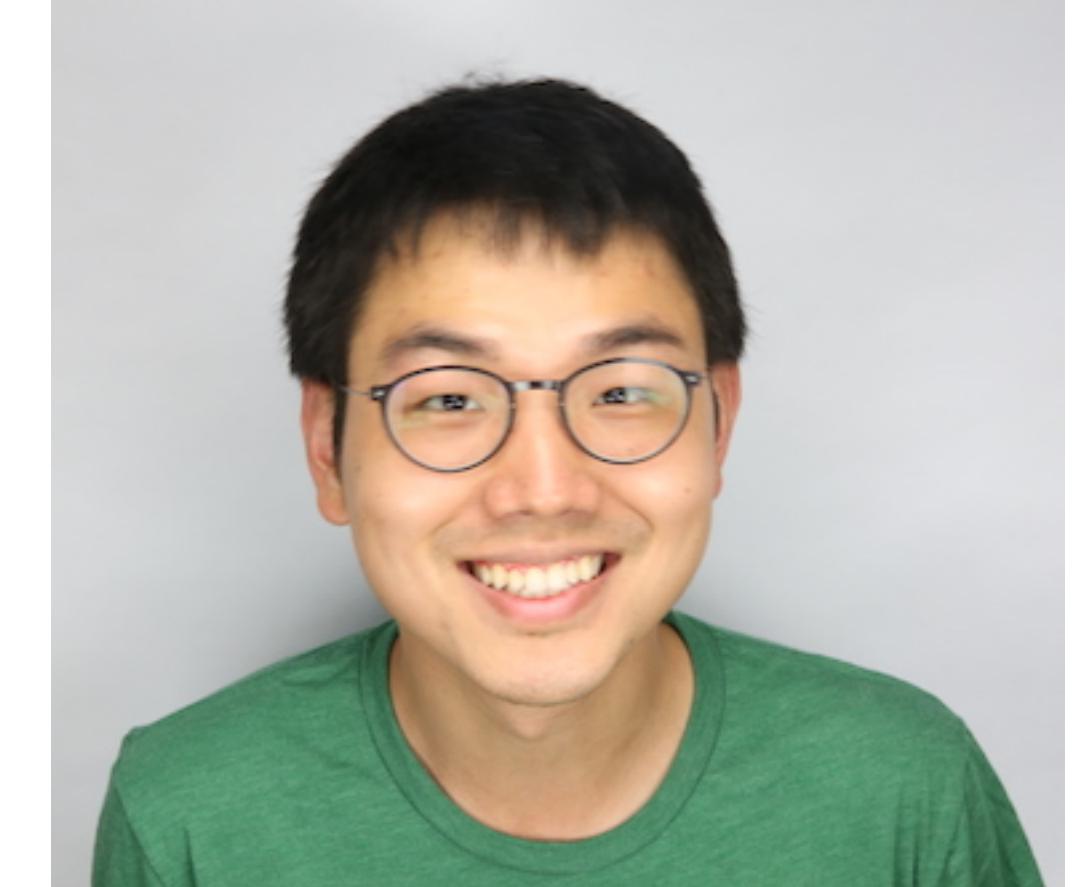
Asst. Prof @ UCSD-HDSI

**HCI, Privacy, Mobile Computing**

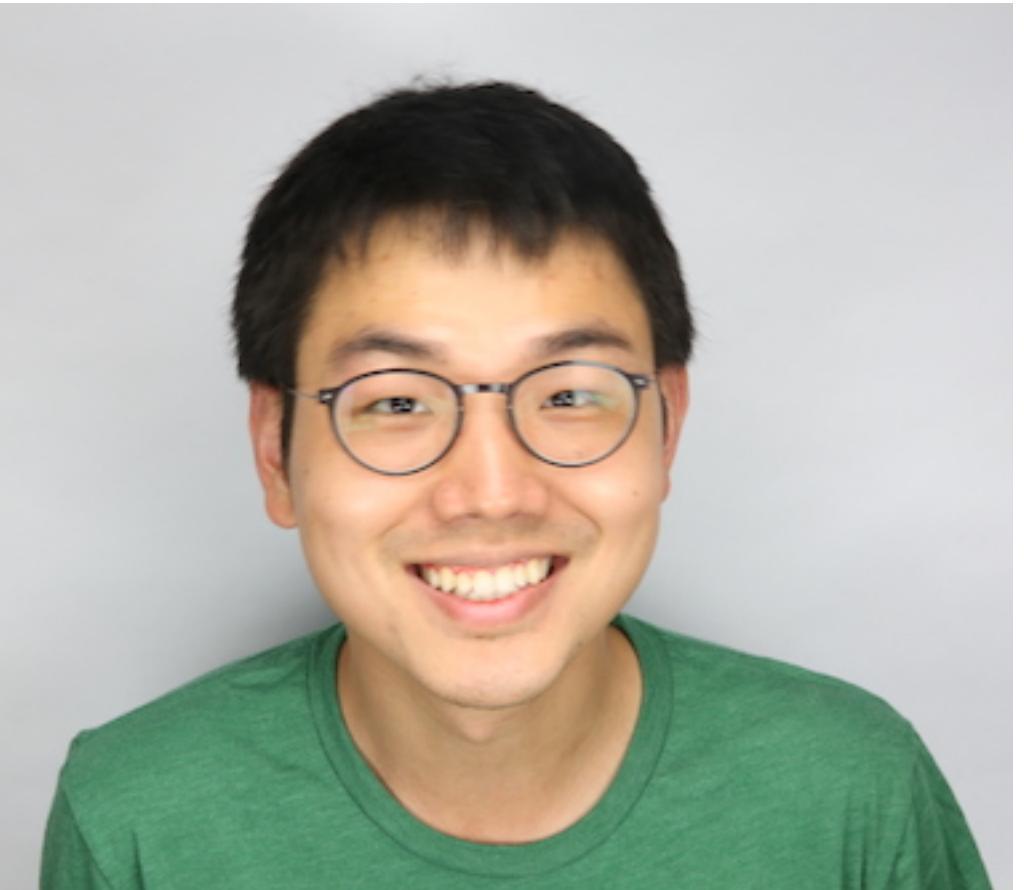
**Database, Programming Language, Software Engineering**

Ph.D. from CMU Human-Computer Interaction Institute

Before Ph.D.: worked at Yahoo Research, ran a startup



# How much do you know about privacy?



**Privacy is a first world problem. I do  
not care.**

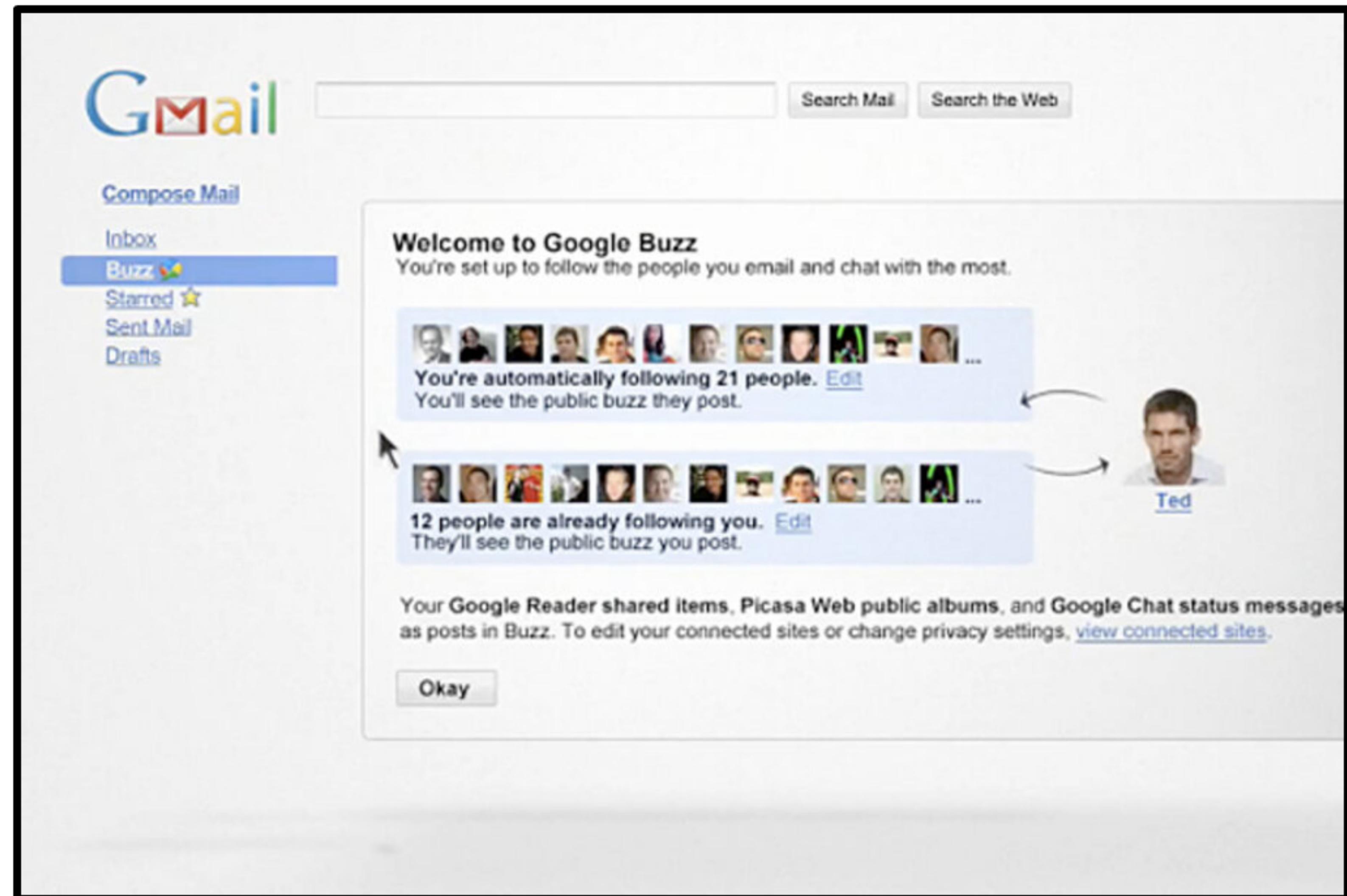
LINATCO... HACKED  
AREA 51... HACKED  
STATUE OF LIBERTY... HACKED



# Privacy v.s. Security

- A user's bank account is hacked, and the hacker takes the user's money.
- A user's friend knows the password and logs into the user's bank account to check the spending history.
- The bank sells users' data to a third-party agency; the agency uses the user's shopping history to recommend something to that user, which may leverage the users' vulnerability.

# Anyone knows Google Buzz?





"If you've done nothing wrong,  
you've got nothing to worry about."

# Google Agrees to 20 Years of Privacy Audits

The Internet giant agrees to increased scrutiny in the wake of privacy issues surrounding its fledgling social network, Google Buzz

BY RACHEL COURTLAND | 30 MAR 2011 | 2 MIN READ | 

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TAGS

SOCIAL NETWORKS

INTERNET

INTERNET CONTROL

FACEBOOK

SOCIAL MEDIA

PRIVACY

SOFTWARE

SECURITY

GOOGLE

It's been just about a year since members of Congress asked the US Federal Trade Commission (FTC) to look into privacy issues concerning Google Buzz, Google's social networking site.

Now Google has agreed to settle FTC complaints that the company "used deceptive tactics and violated its own privacy promises to consumers when it launched its social network". According to the settlement, Google can't misrepresent their privacy policies in the future and must submit to biennial, independent privacy audits for the next 20 years.

Launched in February 2010, Buzz offered a way for Gmail users to post updates

# Facebook Cambridge Analytics



United States Department of Justice (.gov)

[https://www.justice.gov/opa/facebook-agrees-pay-5... ::](https://www.justice.gov/opa/facebook-agrees-pay-5-billion-civil-penalty-and-implementing-new-compliance-measures)

## [Facebook Agrees to Pay \\$5 Billion and Implement Robust ...](#)

Jul 24, 2019 — Facebook has agreed to settle these allegations by paying a \$5 billion civil penalty and implementing robust, new compliance measures.



CNN

[https://www.cnn.com/2023/04/19/tech/facebook-settles-cambridge-analytica-lawsuit/index.html ::](https://www.cnn.com/2023/04/19/tech/facebook-settles-cambridge-analytica-lawsuit/index.html)

## [You can now apply for your share of a \\$725 million ...](#)

Apr 19, 2023 — Meta agrees to pay \$725 million to settle lawsuit over Cambridge Analytica data leak ...  
Meta did not admit wrongdoing as part of the settlement.

# Uber

On July 22, 2024, the Dutch Data Protection Authority (DPA) (Autoriteit Persoonsgegevens, AP) imposed a fine of **290 million euros** (about US\$324 million) on Uber for violating the European Union's (EU's) General Data Protection Regulation (GDPR). Sep 12, 2024



The Library of Congress (.gov)

<https://www.loc.gov/item/global-legal-monitor/neth...> :

[Netherlands: Uber Heavily Fined for Violating EU's General ...](#)



WSJ

<https://www.wsj.com/tech/netflix-fined-4-8-million-...> :

## Netflix Fined \$4.8 Million by Dutch Watchdog Over Data- ...

Dec 18, 2024 — Netflix Fined \$4.8 Million by Dutch Watchdog Over Data-Handling Disclosures. The company broke EU rules on the storage and management of ...

- Why cannot they avoid the fine?
  1. They do not care. It's a small amount.
  2. They care. But they thought that no one would catch them.
  3. They care and were afraid of being caught. However, they do not know how to do it right.
  4. Doing it right is expensive. So they intentionally choose to not do it.
  5. They are not aware of the problems, so they do not know how to fix it.



# Privacy

- Technology
- Policy
- Law
- Philosophy
- Ethics
- Cognitive science
- AI
- Business
- .....

## **Some things stay the same**

**Track  
Surveil  
Monitor**

**Profile  
Predict  
Target  
Manipulate**

**Communicate  
Socialize**

## **Some things change**

- GPS, mobile, implantable devices, RFID, CCTV, sensors, networked sensors, image, video and audio, Web cookies, Flash cookies, Web bugs, cross-device, browser tracking
- “Big Data”, databases, data aggregation, mining, predictive modeling, machine learning, data science, data analytics, AI, biometrics, facial recognition
- Internet, Web, IoT, social computing, social networks, Email, mobile tech, “gig” work, social media platforms

# Topic coverage

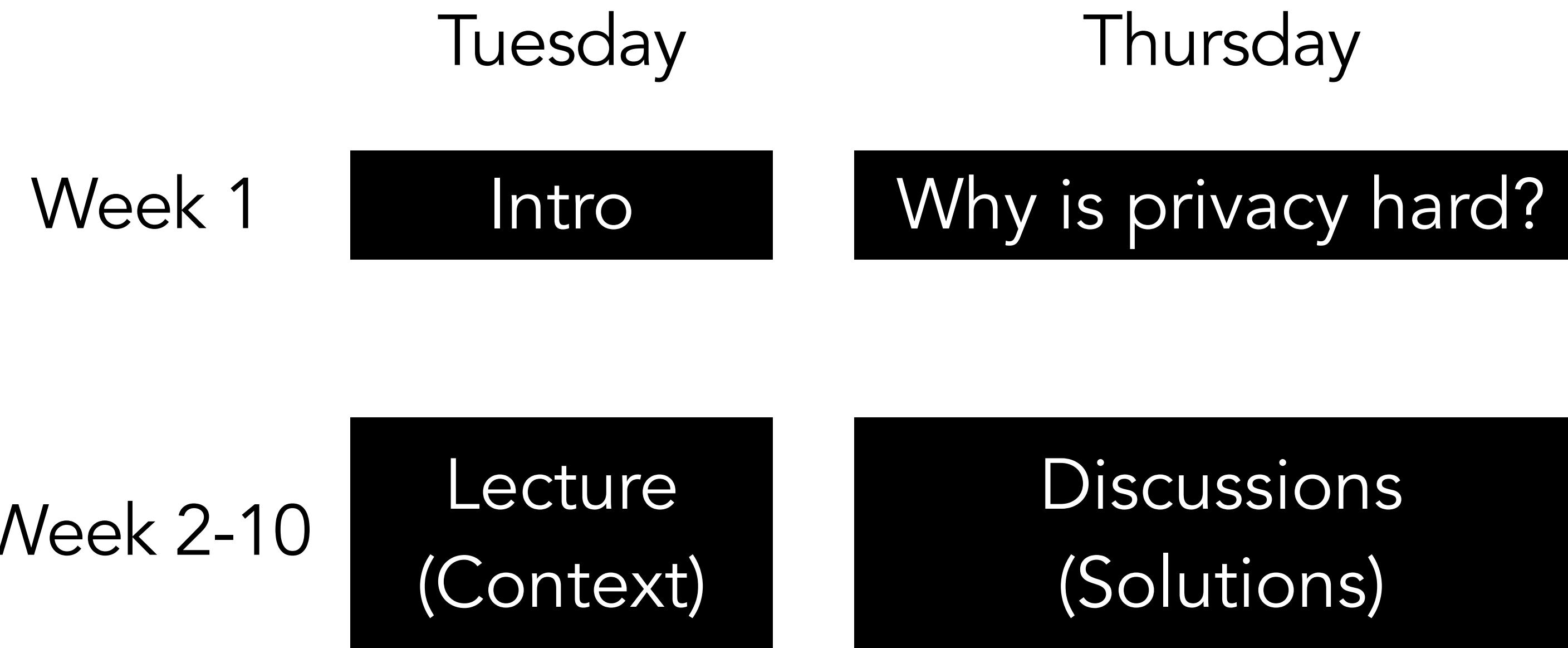
- Web and mobile tracking
- Location privacy
- Data analytics and differential privacy
- Communication privacy and “going dark”
- Privacy in machine learning
- Face recognition and biometrics
- Genomic privacy
- IoT privacy
- Contextual integrity
- Ethical and philosophical approaches to privacy
- Legal landscape of privacy
- Privacy engineering
- Behavioral studies and empirical methods
- Privacy policies
- User studies and HCI issues

# What is this course about?

- Understand range of current problems and tensions around data privacy.
- Learn why privacy is hard.
- Learn the designs/proposals/methods to address privacy problems?
  - Not just for content but context
  - Why does this design/proposal/paper exist?
  - Why do they fail?
  - Can we do sth better? (My research & your course projects!)

# Questions?

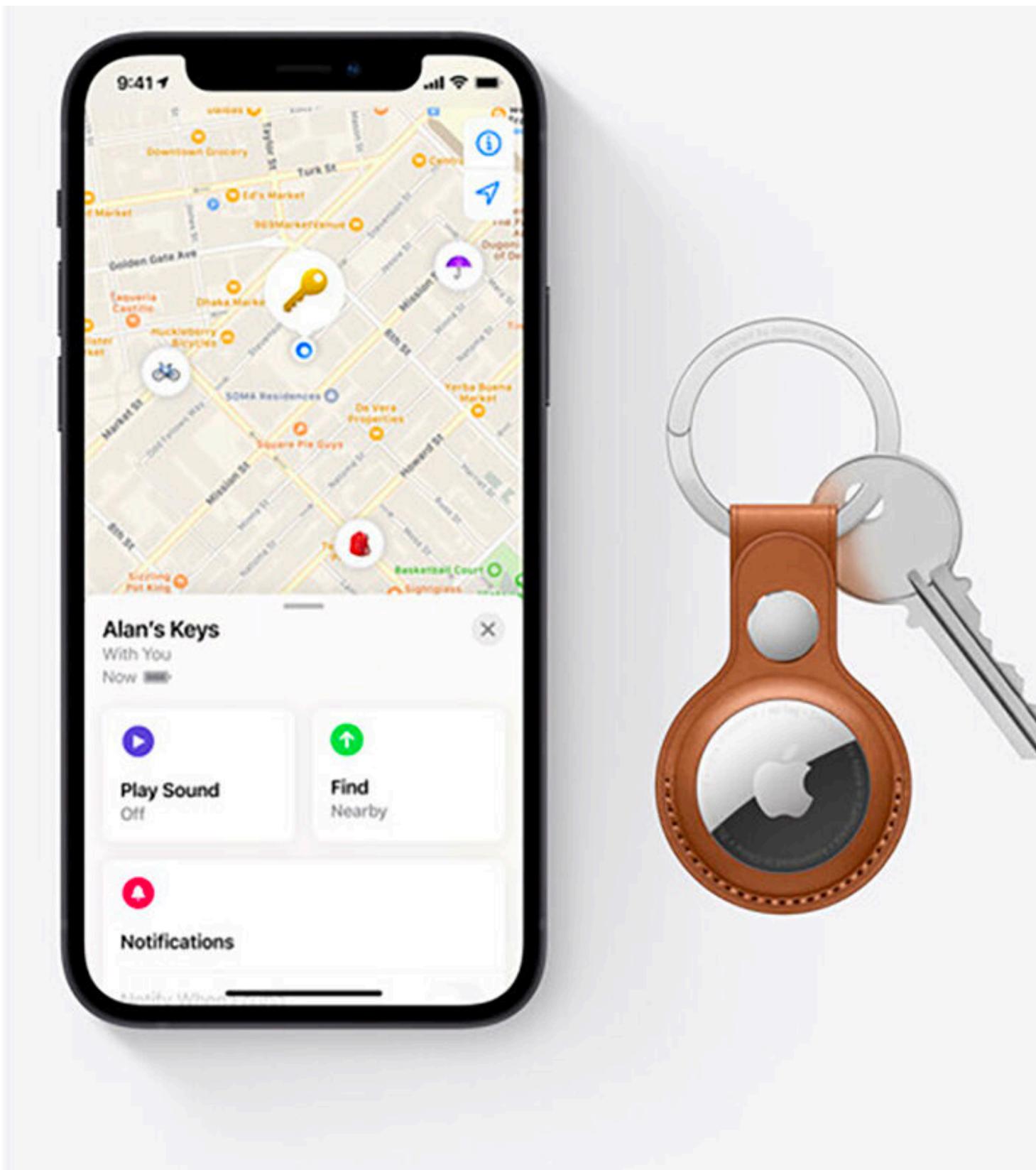
# The structure of the course



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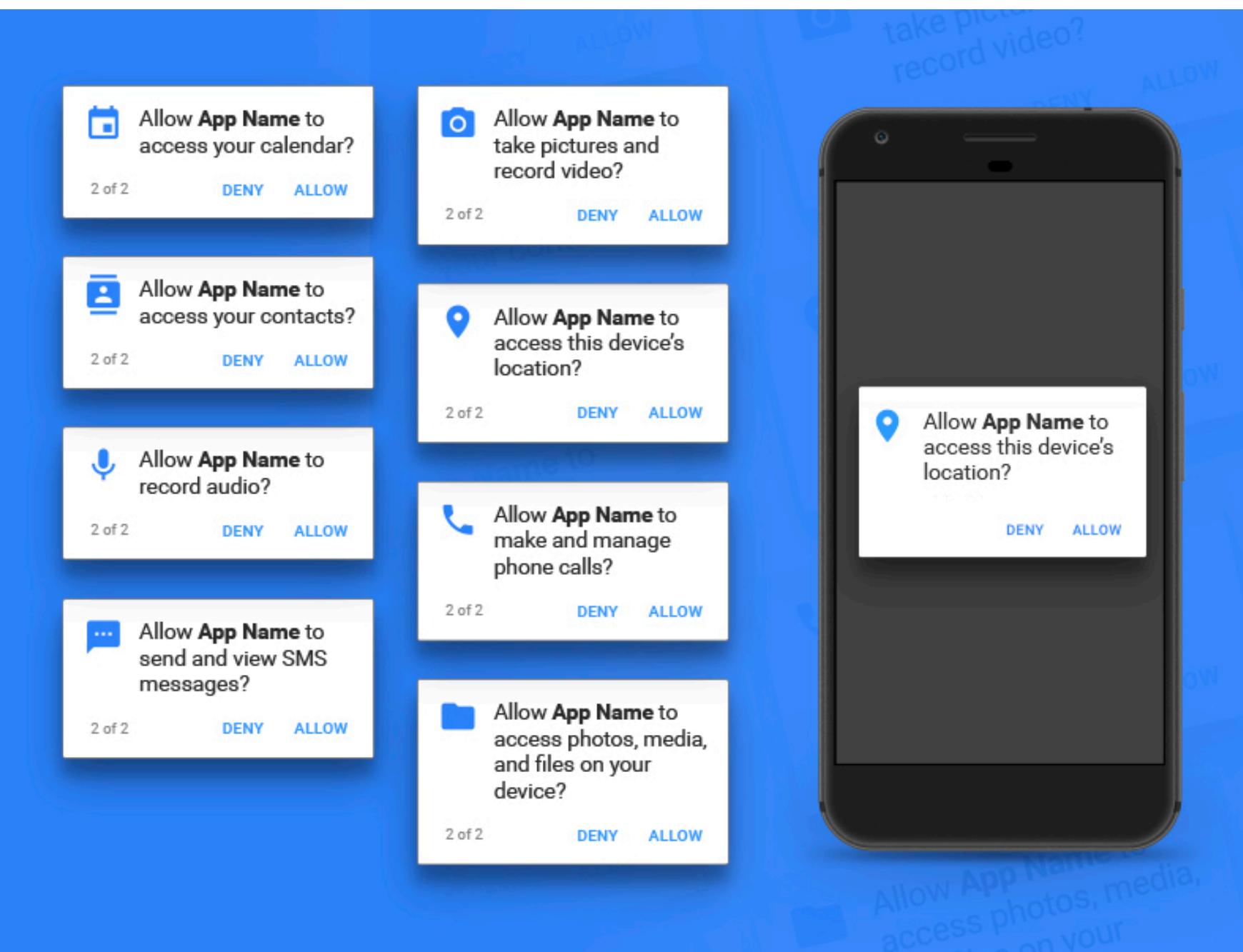
- Week 2: Apple AirTag, Contact Tracing
  - Location privacy, data collection purpose
- Week 3: Android permission, Browser cookie consent
  - Permissions, notice, control, consent, usability
- Week 4: P3P
  - Privacy policies, overcorrection, over sensing
- Week 5: Target pregnancy prediction
  - Privacy engineering, privacy expectation, contextual integrity

# Week 2: Apple AirTag & contact tracing

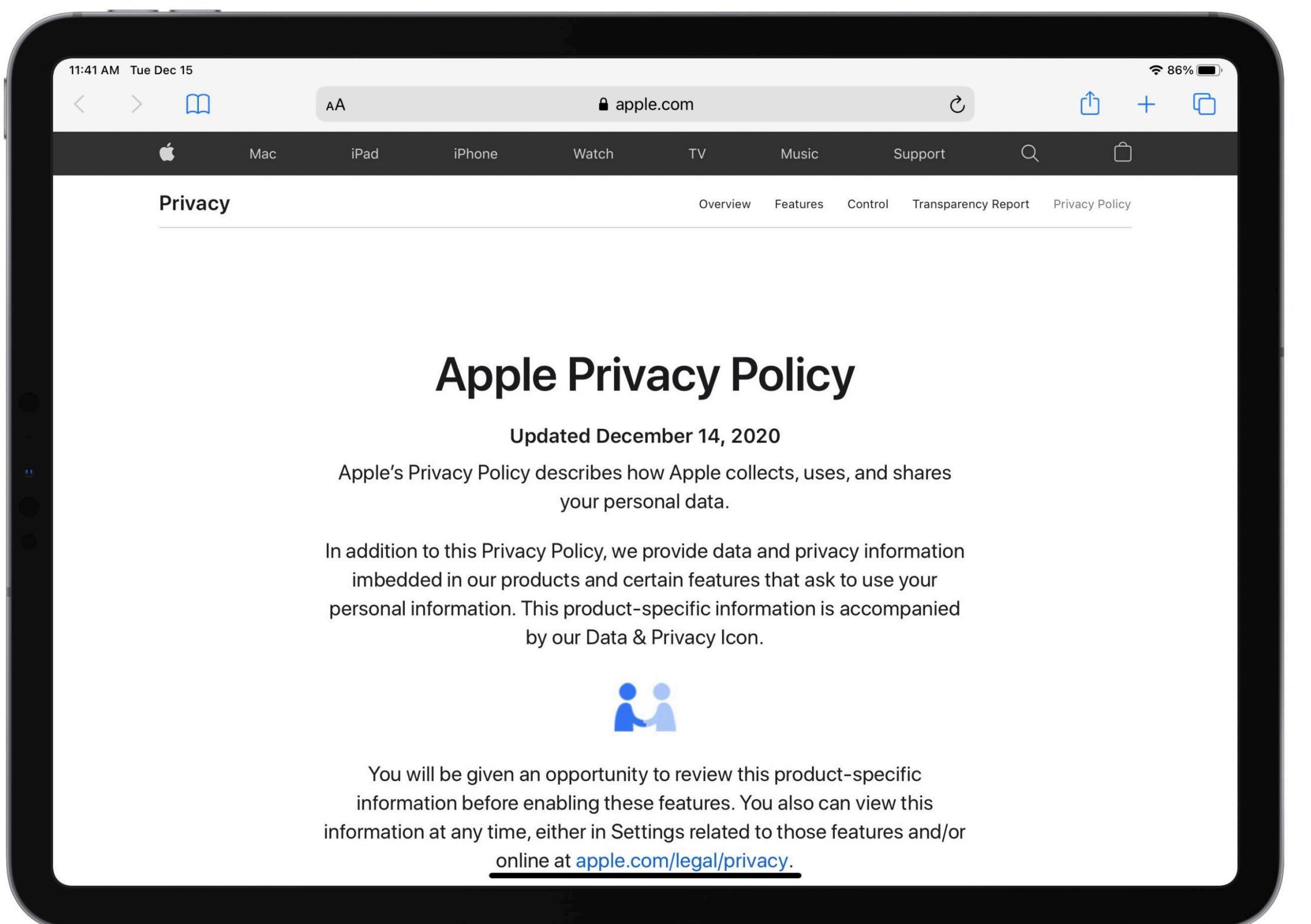


- What if you put your tag in your girlfriend's backpack?
- What if someone pick your tag?
- Does apple know everything about me?

# Week 3: Android permissions & Browser cookie consent



# Week 4: P3P



## Data Used to Track You

The following data may be used to track you across apps and websites owned by other companies:

- Location
- Contact Info
- Browsing History
- Identifiers
- Usage Data



## Data Linked to You

The following data may be collected and linked to your identity:

- Purchases
- Financial Info
- Location
- Contact Info
- Contacts
- User Content
- Search History
- Browsing History
- Identifiers
- Usage Data
- Diagnostics



## Data Not Linked to You

The following data may be collected but it is not linked to your identity:

- User Content

# Week 5: Target pregnancy prediction



The image shows a composite of three screenshots from the Uber app illustrating surge pricing. The first screenshot shows the main Uber interface with a map of San Francisco and a button to 'SET PICKUP LOCATION'. The second screenshot shows a 'SURGE PRICING' overlay with the text: 'Demand is off the charts! Fares have increased to get more Ubers on the road.' It features a large circular icon with '2.0X THE NORMAL FARE' and fare details: '\$9 MINIMUM FARE', '\$0.52 / MIN' and '\$2.60 / MILE'. The third screenshot shows another 'SURGE PRICING' overlay with a numeric keypad for confirming the fare multiple. The keypad has a grid of numbers: 1, 2, 3 (top row); 4, 5, 6 (middle row); 7, 8, 9 (bottom row); and 0 (bottom right). There are also buttons for 'CONFIRMATION' and 'MY FARE WILL BE'.

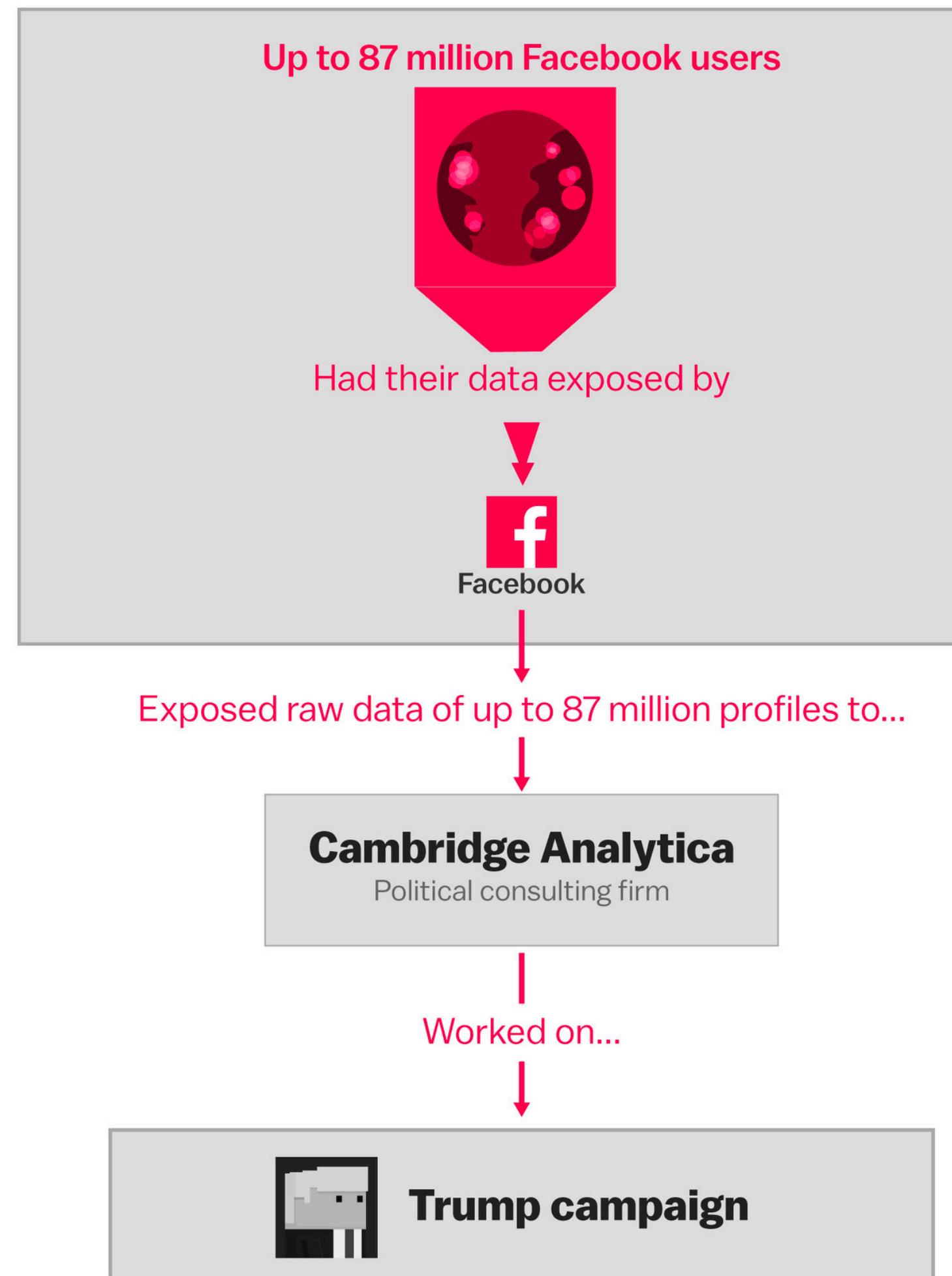
# The structure of the course

- Week 6: US Census Bureau
  - Differential privacy, K-anonymity
- Week 7: Facebook cambridge analytic
  - Privacy & high stake tasks & vulnerable population
- Week 8: Big brother privacy
  - Onion routing, E2EE
- Week 9: Dark patterns
  - Agency, usability

## Week 6: US Census Bureau

87 percent of all Americans could be uniquely identified using only three bits of information: ZIP code, birthdate, and sex.

# Week 7: Facebook Cambridge Analytic



# Week 9: Dark pattern

The screenshot shows a course landing page for "Introduction to Probability and Data". On the left, there's a sidebar with links: Syllabus, FAQs, Creators, Pricing, Ratings and Reviews, and a large green button labeled "Try for free". Below the sidebar, it says "Enroll to start full access" and has a blue "Enroll" button. A red box highlights the text "Get 6 months of access for \$235.00 USD (includes 20% discount) after the free trial or audit".

Introduction to Probability and Data

7-day Free Trial

Introduction to Probability and Data is part of the larger Statistics with R Specialization. Your 7-day free trial includes:

- ✓ **Unlimited access to all courses in the Specialization**  
Watch lectures, try assignments, participate in discussion forums, and more.
- ✓ **Cancel anytime.**  
No penalties - simply cancel before the trial ends if it's not right for you.
- ✓ **\$49 USD per month to continue learning after trial ends.**  
Go as fast as you can - the faster you go, the more you save.
- ✓ **Certificate when you complete.**  
Share on your resume, LinkedIn, and CV.

Start Free Trial

Get [6 months of access](#) for \$235.00 USD (includes 20% discount) after the free trial or [audit](#)

# Learning outcome of this course

Privacy-related  
data practice

Previous  
solutions

Tradeoffs &  
critiques

# Components and Grading

- **Reading**
  - 30 papers, around 30 pages of reading each week
- **Reviews**
  - 500 words for two papers each week.
- **Student-lead discussions**
  - Each student does it once/twice.

# Components and Grading

- Online discussion: 30% (9 x 3%);
- In-class discussion: 30%
- Presentation: 40%.

No other homework, midterm, or final!

# Discussion presentation

- Each student will select a class session to be the co-discussion-leader.
- The co-leaders together will be responsible for summarizing and presenting 1 paper.
- If you find other readings that should be added, please let the professor know.
- We will assign the leaders through a Google Sheets signup (class access only), and negotiation.

# Discussion instructions

- See detailed instructions in the course website.
- Expect the presentation to be about 7 minutes.
- Please prepare some slides to present in class.
- The students in the class will evaluate your presentation using Google forms.