CPSC 426/526
Anonymous Communications

Ennan Zhai
Computer Science Department
Yale University

Credits: Some slides from Bryan Ford’s talks
Recall: Lec-13

• In lec-13, we learned:
  - Difference between privacy and anonymity
  - Anonymous reputation system
  - Potential issues
Lecture Roadmap

• Tracking Resistance

• Anonymous Communication: Dissent
Tracking on the Internet
Tracking on the Internet

Do you think nobody knows are you a dog?
Tracking on the Internet

Actually, they know exactly what kind you are.
Tracking on the Internet

Tracking what you are doing

black dogs, and white dogs are all at a dog party!
What a dog party!
Tracking on the Internet

What you and your friends like to buy

Gift suggestion ...

Rawhide Bone Dog Treat Size: 24" by Pet Time

$18.29 $16.73 Prime
Order in the next 27 hours and get it by Monday, Feb 24.
Only 19 left in stock - order soon.

More Buying Choices
$5.65 new (19 offers)

... based on Rover's Dogbook likes
每当你去购物，你就分享有关你消费习惯的详细信息给零售商。许多零售商正在研究这些细节，以了解你喜欢什么，你需要什么，以及哪些优惠券最有可能让你开心。Target，例如，已经发现如何“数据挖掘”进入你的子宫，以了解你是否即将生一个孩子，从而决定你应该何时开始购买尿布。
This is my dog Bili. He is a border collie. He is very smart and understands many commands in various languages.
Tracking on the Internet

This is my dog Bili. He is a border collie. He is very smart and understands many commands in various languages.

One day, he wants to access the Internet.
Tracking on the Internet

Facebook

Twitter

Google

Gmail
Tracking on the Internet

Facebook

Twitter

Google

Account

Account
Tracking on the Internet

Twitter
Google
Facebook
Account

Facebook
Gmail
Google
Account
Tracking on the Internet
Tracking on the Internet
Tracking on the Internet
Some efforts can solve Single Sign-On linkability issue.
CryptDB can preserve your data privacy
Dissent offers anonymous communication
Lecture Roadmap

• Tracking Resistance

• Anonymous Communication: Dissent
Next Lecture

• In the lec-15, I will learn:
  - Failures in distributed systems
  - Categories of failure handling mechanisms
  - Case study: Understanding failures in popular distributed systems