Thinking Inside the Box:
Using FreedomBox to Protect Your Freedoms

Danny Haidar
FreedomBox Foundation
In the news...
Data-mining

Facebook has suspended over 400 apps after Cambridge Analytica scandal

by Heather Kelly  @heatherkelly

August 23, 2018  8:15 AM ET
Data-mining

The New York Times

STATE OF THE ART

Can Facebook, or Anybody, Solve the Internet’s Misinformation Problem?
Silicon Valley siphons our data like oil. But the deepest drilling has just begun.

Personal data is to the tech world what oil is to the fossil fuel industry. That's why companies like Amazon and Facebook plan to dig deeper than we ever imagined.
Data-Mining

Monday, August 28, 2017

*The IRS Is Mining Taxpayer Data On Social Media In Violation Of Federal Privacy Law*

By Paul Caron

Kimberly Houser & Debra Sanders (Washington State), *The Use of Big Data Analytics by the IRS: Efficient Solutions or the End of Privacy as We Know It?,* 19 Vand. J. Ent. & Tech. L. 817 (2017):

This Article examines the privacy issues resulting from the IRS’s big data analytics program as well as the potential violations of federal law. Although historically, the IRS chose tax returns to audit based on internal mathematical mistakes or mismatches with third party reports (such as W-2s), the IRS is now engaging in data mining of public and commercial data pools (including social media) and creating highly detailed profiles of taxpayers upon which to run data analytics. This Article argues that current IRS practices, mostly unknown to the general public are violating fair information practices. This lack of transparency and accountability not only violates federal law regarding the government’s data collection activities and use of predictive algorithms, but may also result in discrimination.
Hedge funds see a gold rush in data mining

Investors seek an advantage from tradable intelligence but legality of alternative data is in question
Data-Mining

Surveillance

Facebook, Instagram, and Twitter Provided Data Access for a Surveillance Product Marketed to Target Activists of Color

By Matt Cagle, Technology and Civil Liberties Policy Attorney, ACLU of Northern California

OCTOBER 11, 2016 | 11:15 AM

The IRS Is Mining Taxpayer Data On Social Media In Violation Of Federal Privacy Law

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Spyware That Governments Can’t Resist

Leer en español

By THE EDITORIAL BOARD  JULY 11, 2017
Censorship

Google employees demand more oversight of China search engine plan

Joseph Menn, Paresh Dave

SAN FRANCISCO (Reuters) - Google is not close to launching a search engine app in China, its chief executive said at a companywide meeting on Thursday, according to a transcript seen by Reuters, as employees of the Alphabet Inc (GOOGL.O) unit called for more transparency and oversight of the project.
Censorship

REMEMBERING LIU XIAOBO

Analyzing censorship of the death of Liu Xiaobo on WeChat and Weibo

By Masashi Crete-Nishihata, Jeffrey Knockel, Blake Miller, Jason Q. Ng, Lotus Ruan, Lokman Tsui, and Ruohan Xiong

July 16, 2017

Key Findings

- The scope of censorship of keywords and images on WeChat related to Liu Xiaobo expanded greatly after his death. Our analysis of WeChat keyword-based censorship shows that after his death messages containing his name in English and in both simplified and traditional Chinese are blocked. His death is also the first time we see image filtering in one-to-one chat, in addition to image filtering in group chats and WeChat moments.
Censorship

Turkish court backs censorship of Wikipedia

The country continues to crack down on free speech with this rejected appeal.

Rob LeFebvre, @roblef
05.05.17 in Politics

15 Comments
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Why is this possible?
Why is this possible?
A technical answer: the client-server model
Client-Server Model

By Gnome-fs-client.svg: David Vignoni Gnome-fs-server.svg: David Vignoni derivative work: Calimo (Gnome-fs-client.svg Gnome-fs-server.svg) [LGPL (http://www.gnu.org/licenses/lgpl.html)], via Wikimedia Commons
Centralized Network Infrastructure

centralised

decentralised
What is at the center?
Why is this possible?
A social-economic answer: digital feudalism
Client-Server Model

Image Source:
https://thegrand0ptimist.wordpress.com/2015/09/05/digital-feudalism/
Who are the lords?
Who are the peasants?
We are. (AKA the “clients”).
How can we fix the web?
FreedomBox: A Simple Machine
What is FreedomBox?

- A multipurpose privacy appliance
- Independent node in the network
- Two parts: Software system + Hardware
- Four main functions (but not only four):
  - Private server
  - Communications hub
  - Browsing tool
  - Wi-Fi Router
- Design philosophy:
  - Simple
  - Customizable
  - Multi-functional
- Vision: integrate privacy technology into one system that is easy to use.
Our Free Software: Debian
"That level where we’re actually talking about knitting together mesh nets or small scale cell networks—that's awesome. And we should do more about it. I think we will have the most success personally where we're leapfrogging any technologies that are more mobile and more agile, and [in which] we don't have the same kind of sunk infrastructure costs because ultimately infrastructure is what can be targeted by the adversary."

-Edward Snowden, LibrePlanet 2016
How to make a FreedomBox: Hardware

- Single-board computer: ~$35*
- SD Card: ~$10
- SD-USB adapter: ~$5 (optional)
- Ethernet cord: ~$5
- Power cord: ~$5

*Raspberry Pi 2 + case, others supported
How to make a FreedomBox: Software

1. Download

   freedombox.org

2. Burn image to SD card

3. Insert SD and log in

   freedombox.local
FreedomBox: The Interface

Coquelicot (File Sharing)
Deluge (BitTorrent Web Client)
ejabberd (Chat Server)
iWiki (Wiki and Blog)
infinoted (Gobby Server)
JSXC (Chat Client)
Matrix Synapse (Chat Server)
MediaWiki (Wiki)
Minetest (Block Sandbox)
Mumble (Voice Chat)
OpenVPN (Virtual Private Network)
Privoxy (Web Proxy)
Quassel (IRC Client)
Radicale (Calendar and Addressbook)
repro (SIP Server)
Roundcube (Email Client)
Searx (Web Search)
Shadowsocks (Socks5 Proxy)
Sharing
Syncthing (File Synchronization)
Tahoe-LAFS (Distributed File Storage)
Tiny Tiny RSS (News Feed Reader)
Tor (Anonymity Network)
Transmission (BitTorrent Web Client)
How to Install an App: One Click!

Installation: IRC Client (Quassel)

Quassel is an IRC application that is split into two parts, a "core" and a "client". This allows the core to remain connected to IRC servers, and to continue receiving messages, even when the client is disconnected. FreedomBox can run the Quassel core service keeping you always online and one or more Quassel clients from a desktop or a mobile can be used to connect and disconnect from it.

You can connect to your Quassel core on the default Quassel port 4242. Clients to connect to Quassel from your desktop and mobile devices are available.

Install this application?

Install
FreedomBox Live Demo

• URL: fosscon.freedombox.rocks

• Login information:
  - Username1: carol
  - Password1: debianpureblend
  - Username2: akeel
  - Password2: debianpureblend
FreedomBox Live Demo
FreedomBox Features

- **Private Browsing**: No tracking, no data-mining, no censorship
- **Secure Communications**: No surveillance, no third parties, no storage of past communications without consent
- **Safe Activism**: No monitoring, no collection of location data, no data-mining
Private Browsing

- Protection against “traffic analysis” and tracking (Tor, Dynamic DNS, PageKite)
- Protection against censorship (OpenVPN)
- Anti-tracking ad blocker (Privoxy)
- Anti-tracking, anonymous search (Searx)
Secure Communications

- Self-hosted chat applications with no intermediary (XMPP, Quassel, Matrix)
- Medium for secure file transfers (Deluge, Transmission)
- Private voice communications with no eavesdropping (Mumble VoIP)
- Email (RoundCube)
- Social media network owned by you and your friends (Diaspora)
Safe Activism

- A publishing platform that resists oppression and censorship (Ikiwiki)
- Mesh routing when the Internet is shut down
- Safe social networking that cannot be monitored and data-mined (Diaspora)
Who is FreedomBox?

- **FreedomBox community**
  - Global community of developers (60+)
  - Global community of translators (60+) working in 21 languages

- **FreedomBox Foundation**
  - Supporting 501(c)3 non-profit organization based in New York
  - About me: Product and Development
FreedomBox is Global

- Rural India: FreedomBox for Wi-Fi routing
- Partnership with Localization Lab: push to translate into languages of India and more
Installfest, Netherlands, Aug. 2017
The Future of FreedomBox

• Goals:
  – To create mainstream technology for home use, casual and advanced
  – To prioritize simplicity, freedom, and clean experiences
  – To decentralize the net and empower users to regain control

• Where we are going:
  – Hardware distributors to find partners
  – University campuses and educational institutions
  – Small businesses
  – Urban, suburban, and rural communities
Join us!
Raffle...
Questions?
Articles Cited

- https://www.ft.com/content/d86ad460-8802-11e7-bf50-e1c239b45787
- crackedlabs.org/en/corporate-surveillance
- https://www.engadget.com/2017/05/05/turkey-wikipedia-censorship/
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• Community email list:wiki.debian.org/FreedomBox/Support
• Contact me: haidar@freedomboxfoundation.org