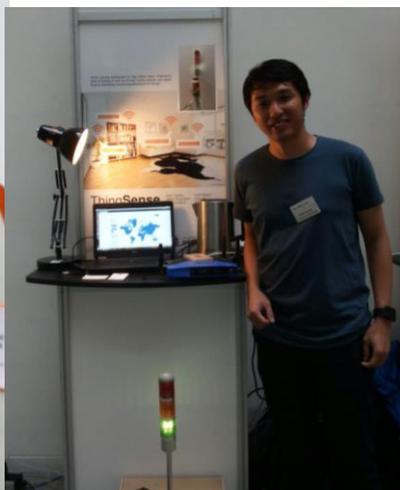
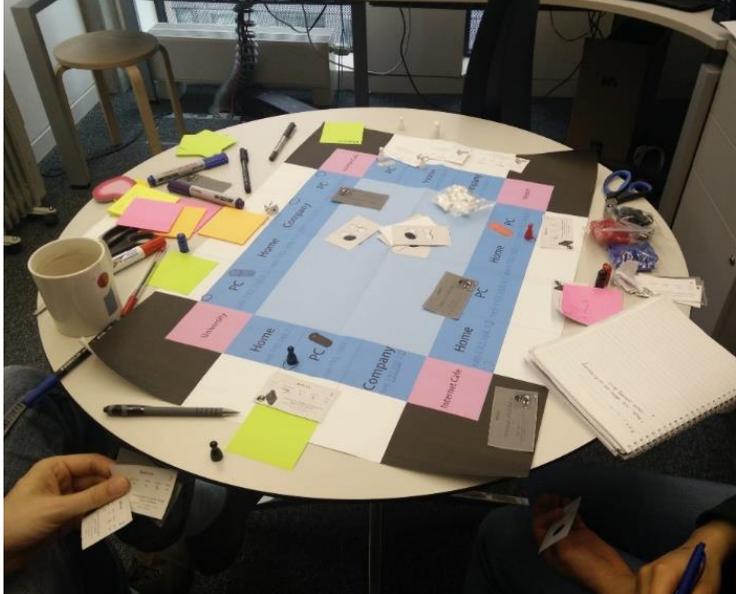




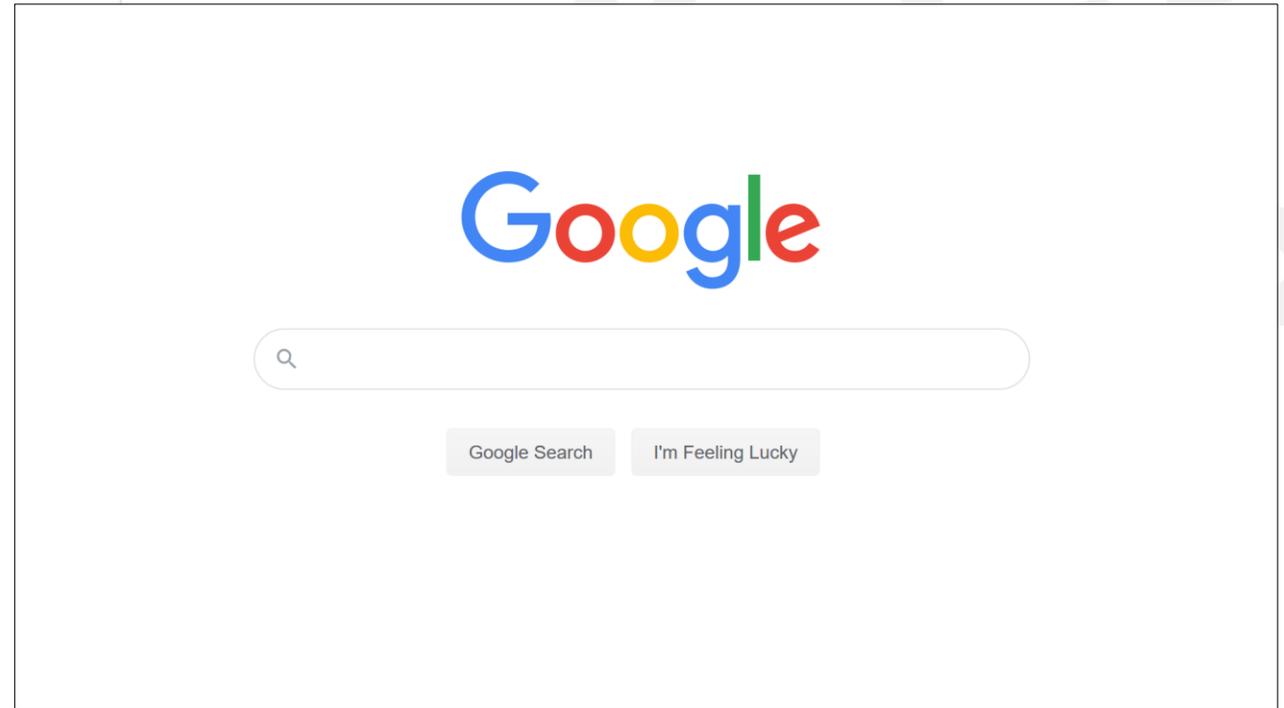
Developer Centered Security

MOHAMMAD TAHAEI, KAMI VANIEA, NAOMI SAPHRA

{FIRSTNAME.LASTNAME}@ED.AC.UK

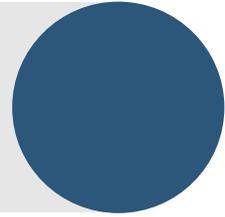


End users' requirement of usability is starting to be acknowledged as a serious market differentiator

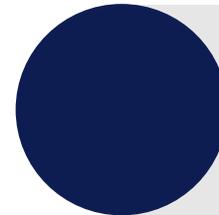


Good usability isn't just about convenience

REDUCE SELF-HARM ERRORS



EFFICIENCY OF USAGE



Recent realization: developers are users too



Even worse, everyone now thinks they can code

 **the WHITE HOUSE**
PRESIDENT BARACK OBAMA

BRIEFING ROOM | ISSUES | THE ADMINISTRATION | 1600 PENN

HOME · BLOG

President Obama Is the First President to Write a Line of Code

DECEMBER 10, 2014 AT 4:03 PM ET BY EZRA MECHABER

Summary: President Obama became the first president to write a line of code as part of the "Hour of Code" -- an online event to promote Computer Science Education Week.

[Watch on YouTube](#)

On Monday afternoon, President Obama became the first president to write a line of code.

As part of the "Hour of Code" -- an online event to promote Computer Science Education Week -- the President and Vice President joined middle-school students from New Jersey for a computer coding exercise.

President Obama spoke about the importance of strengthening STEM education, especially for girls and students underrepresented in STEM fields: "Part of what we're realizing is that we're starting too late when it comes to making sure that our young people are familiar with not just how to play a video game, but how to create a video game."



A Survey on Developer- Centered Security



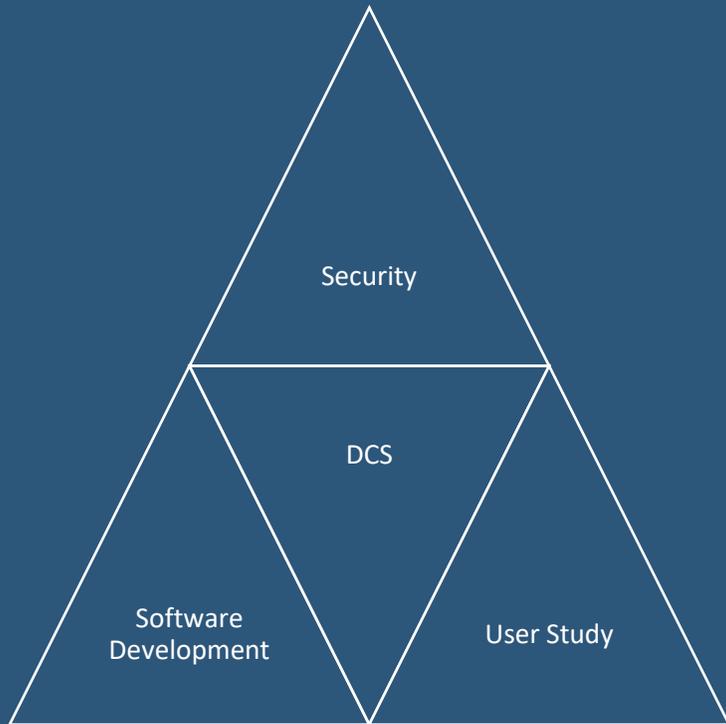
Mohammad Tahaei



Kami Vaniea

Identified Research Themes

1922 papers reviewed
49 fit all criteria



Security Tool Adoption (17)

Education



Organisations and Context (10)

NFRs

Dedicated Security Team
Communication Around Fixing etc.



Application Programming Interfaces (9)

Considering Options
Testing the Usability of Security APIs



Structuring Software Development (7)

Security Design Patterns
Software Development
Methodologies
Information Sources



Testing Assumptions (2)



Privacy and Data (2)



Programming Languages (1)



Third Party Updates (1)

Gaps



When to interrupt the user?



Are students similar to professional developers?



Comparing tools and evaluating a wider breadth of available tools.



Education support for developers learning about secure coding practices.



Privacy support for decision making and providing good options for developers.



How to best support team-based development?

Understanding Privacy-Related Questions on Stack Overflow



Mohammad Tahaei



Kami Vaniea



Naomi Saphra

Stack Overflow

- Question and answer site for software developers
- Over 50 million unique visitors a month
- “Watering hole” where many people go to learn from, so potential source of information spread
- Q&A produces “shadow documentation” where documentation for code-related tools ends up copied to the site

The screenshot shows the 'All Questions' page on Stack Overflow. At the top, there are navigation options: 'Newest', 'Active', 'Bountied 486', 'Unanswered', and 'More'. A search bar and a 'Filter' button are also visible. The page displays a list of questions, each with a title, a brief description, tags, and user information. The questions listed are:

- How to keep svg in relation to responsive full screen background image with react**
I'm having difficulties with an svg that I want to position on a background image. Requirements: Background Image should be responsive and full screen. svg needs to be positioned on a certain ...
Tags: css, reactjs, svg, background-image, responsive
Asked 39 secs ago by Sarah (1 vote)
- Finding the standard deviation on validation - Grid Search**
My question is regarding this documentation. I am trying to understand what is the standard deviation on validation, and which parameter I can access to find it. Is it already mentioned below, or do ...
Tags: scikit-learn, grid-search
Asked 47 secs ago by Afia R. S. (13 votes, 3 answers)
- Download File Django Through Ajax Request**
How to download file in django, through ajax call ?. (Note : Don't want to return a file as response, just return a status variable that download is successful) Please help.
Tags: javascript, python, django, ajax
Asked 57 secs ago by My Projects (31 votes, 6 answers)
- Customize email verification link issue in laravel**
I have admin portal and customer portal in my laravel based application customer portal: customer.site admin portal :admin.site I have option to register for customers on my customer portal. Once an ...
Tags: php, laravel, laravel-5, laravel-6, verification
Asked 1 min ago by Volka Dimitrev (601 votes, 2 answers, 11 comments)
- Unable to find id of element**
I have created the following function which is used to find an element ID. When I run the function in the console it works fine. //get track element by ID function getTrackElement(id) { for ...
Tags: javascript, arrays, d3.js
Asked 1 min ago by Bobbalob (5 votes, 7 answers)
- filename expansion on assigning a non-array variable**
This is about Zsh 5.5.1. Say I have a glob pattern which expands to exactly one file, and I would like to assign this file to a variable. This works: # N: No error if no files match. D: Match dot ...
Tags: zsh
Asked 1 min ago by user1934428 (7,779 votes, 2 answers, 20 comments, 44 views)
- What is the time complexity of sliding and grouped functions of list in scala**
I am using sliding function of scala on a list and after drilling, it gives GroupedIterator. I am wondering, what is the time complexity of funtions sliding and grouped? val list = (1 to 10).toList ...
Tags: scala, scala-collections
Asked 1 min ago

Research questions

What topics do Stack Overflow users associate with the word “privacy”?

What or who is pushing Stack Overflow users to engage with privacy-related topics?

How to disable Google asking permission to regularly check installed apps on my phone?

Asked 5 years, 11 months

I'm developing a couple days I get

83

Google may re Settings > Veri

★

13

I get the option to policy to keep or

So my question: installed apps or

android permissions **privacy** policy

How To mask personal identification information using any language like java?

Asked 5 years, 10 months ago Active 3 years, 1 month ago Viewed 6k times

I want to mask PII(personal Identification Information) like Name. Birth Date, SSN, Credit card Number, Phone Number, etc. It should remain same formate , means it looks like real data. And shouldn't be reversible.And it should take less time to mask. Any one please help me.

java encryption **privacy** data-masking

share edit flag

edited Nov 26 '16 at 18:53

Hadi 30.7k ● 8 ● 38 ● 86

asked Mar 13 '14 at 18:22

Brijesh Patel 23 ● 1 ● 5

edited May 9 '14 at 6:54

asked Oct 9 '13 at 7:35

kramer65 11.4k 68 205 352

How to disable Google asking permission to regularly check installed apps on my phone?

Asked 5 years

Can I trust react-devtools not to breach my **privacy**?

Asked 11 months ago Active 11 months ago Viewed 141 times

I am starting to develop webapps in React, and I have found out that the Chrome extension react-devtools is almost a defacto requirement for coding react applications.

1 The tool (and react) is made by Facebook, a company infamously known for their complete lack of moral when it comes to data gathering and creepy surveillance of us all. And it requires the ability to access everything you are browsing (which is probably needed to work it's magic), in order to be installed.

★ react-devtools have almost 1,5 million users (and they are probably all developers). Am I supposed to believe that Facebook will not exploit this obvious opportunity to follow every single thing we developers do in Chrome?

⌚ Does anybody in here know anything about react-devtools, and have anybody tried to analyse what data react-devtools sends in what directions? Because frankly I don't have this amount of trust for Facebook anymore, but it seems like react-devtools is inevitable, if I want to make React apps? :-)

reactjs facebook security **privacy**

share edit flag

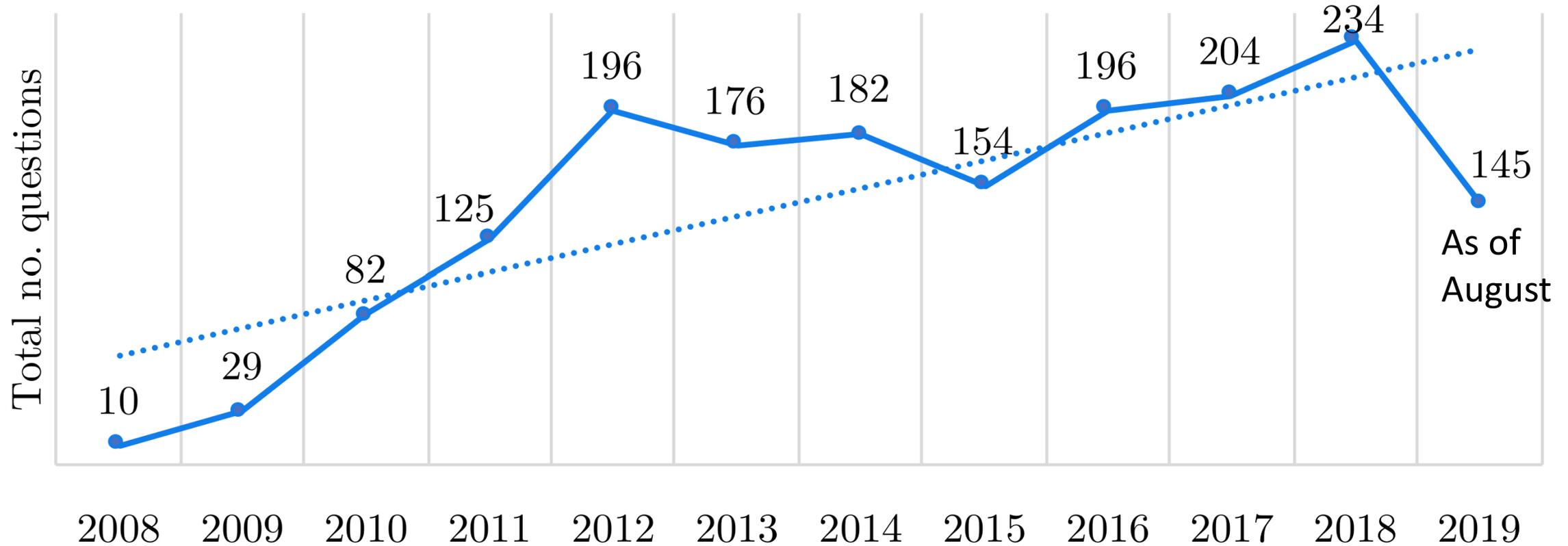
asked Feb 6 '19 at 8:58



hasse

804 ● 1 ● 7 ● 20

Use of "privacy" in SO tags and titles (1,733)



amazon-web-services **android** api asp browser cookies database
database-design email encryption **facebook** facebook-fql
facebook-graph-api firebase firefox git github google-
analytics google-chrome google-play html **ios** iphone java
javascript jquery js macos mysql net node objective-c
permissions **php** plist policy **privacy** privacy-
policy python ruby-on-rails **security** swift vimeo web
windows wordpress **xcode** xmpp youtube youtube-api

Qualitative coding

- 315 randomly selected questions
 - 21 questions excluded for being vague or not about privacy
- 2 coders
- Looked at three aspects:
 - Question type
 - Driver
 - Privacy aspect



Question type

63%

How: instructions, solutions

“I’ve used my personal address for [git] commits and I’m trying to set it to another one before I make the repository public.”

17%

Abstract or conceptual

“What is the hidden cost of using these CDN services? If the script is not cached by the browser and it loads the script from google what could google potentially do with this information?”

16%

Errors

“I still get privacy error with ‘NET::ERR_CERT_AUTHORITY_INVALID’ in the browser when I hit the ELB url using https”

63%

Unexpected behavior

“I set microphone permission in info.plist file so record audion permission alert displaying in iOS 10.3.2 but its not appearing in IOS 10.3.3 devices.”

Drivers

- 49% Personal or unstated drivers
 - Clients requesting a feature
 - Users wanting something
 - The developer themselves thinking that something should be done
- 46% Platform (e.g. Apple app store, Google Play...)
 - Requirements for posting
 - UI elements added by platforms
- 2% Laws and regulations (e.g. GDPR)
 - Speculation if a behavior is allowed or legal

■ Platforms

*"I am submitting my app on App Store Connect\My App page and when I submit for review, it shows **error** on App Information: "**You must provide a Privacy Policy URL.**" even I have pasted the link to the website show the privacy policy there. I have checked the link using <https://developers.facebook.com/tools/debug/sharing/> and they show no error. Do you know what could be the reason and how to fix it ?" [53097654 - 2018].*

LDA topic analysis

Topic label

1. Access to and read contents
2. Set the privacy field
3. App purchase and user registration
4. Privacy and permission settings and dialogues
5. Crash reporting, analytics tools, and trackers
6. PPs in Google Play and Android
7. Concerns about using Google services
8. Publicity of sensitive data in code repositories
9. Design a db schema with privacy settings
10. Privacy values in Facebook, YouTube, and plists
11. Image privacy statements in Instagram and Windows
12. Store users' sensitive data securely
13. Access to, create, and upload photos and albums
14. Private and public variables
15. Browsers errors (cookies and security settings)

Top five words

app, application, use, android, privacy
user, privacy, like, page, facebook
device, ios, cloud, feature, access
app, user, privacy, access, ios
crashlytics, tracker, integrate, news, advertiser
app, policy, privacy policy, privacy, store
google, button, use google, ad, click
analytics, firebase, repository, google analytics, git
table, privacy, column, transaction, mysql
privacy, post, set, facebook, api
image, windows, statement, instagram, privacy statement
datum, user, use, address, information
photo, album, picture, save, access photo
file, private, privacy, use, code
use, privacy, website, browser, site

Key findings

- Platforms have a large influence on privacy at a developer level
 - Platform (46%) – Usually errors such as “you need a privacy policy to publish the app because it uses sensitive permissions”.
 - Legal and policy (2%) – GDPR or requests for speculation about if something was legal or not.
- Privacy policy writing and *hosting* is challenging. Including knowing what permissions are used and what they are used for (ad libraries).
- Automating privacy settings, such as uploading a YouTube video and setting its access control as part of the upload, confuse developers.
- Handoff between OS and apps for permission granting is challenging.
 - Developers want to control the user experience.
 - Handling “no” answers to permission requests.
- Surprisingly few questions ask for help breaking privacy (6%).

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Thank you!

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