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ÉCOLE POLYTECHNIQUE Fédérale de Lausanne

Workshop on the Future of Privacy Notices and Indicators, SOUPS 2016

Conversational Privacy with Chatbots



Privacy Notice: Current State

When you use Google services, you trust us with your information. This Privacy Policy is meant to help you understand what data we collect, why we collect it, and what we do with it. This is important; we hope you will take time to read it carefully. And remember, you can find controls to manage your information and protect your privacy and security at My Account.



Privacy Policy

Last modified: March 25, 2016 (view archived versions)

Hide examples

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There are many different ways you can use our services – to search for and share information, to communicate with other people or to create new content. When you share information with us, for example by creating a Google Account, we can make those services even better – to show you more relevant search results and ads, to help you connect with people or to make sharing with others quicker and easier. As you use our services, we want you to be clear how we're using information and the ways in which you can protect your privacy.

Our Privacy Policy explains:

- What information we collect and why we collect it.
- How we use that information.
- The choices we offer, including how to access and update information.

We've tried to keep it as simple as possible, but if you're not familiar with terms like cookies, IP addresses, pixel tags and browsers, then read about these key terms first. Your privacy matters to Google so whether you are new to Google or a long-time user, please do take the time to get to know our practices – and if you have any questions contact us.







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Dual Role:

legally binding

human understandable





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Dual Role:

legally binding

human understandable

Can we Split these roles?





Standardization

Acme



Information not collected or used by this site: social security number & government ID, financial, health, location.

Access to your information

This site gives you access to your contact data and some of its other data identified with you

How to resolve privacy-related disputes with this site Please email our customer service department acme.com 5000 Forbes Avenue Pittsburgh, PA 15213 United States Phone: 800-555-5555 help@acme.com

opt out

we will collect and use your information in this way

by default, we will collect and use your information in this way unless you tell us not to by opting out opt in

we will not collect and use your information in this way

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acme.com 5000 Forbes Avenue Pittsburgh, PA 15213 United States Phone: 800-555-5555 help@acme.com

we will not collect and use your information in this way



- Collection of Personal Info (such as e-mail address) Combination with Info from outside Companies No Advertising Tracking (e.g., no use of Ad Cookies) No Disclosure of Personal Info to Advertisers Personal Info is Archived for Unlimited Time

- Stored and Transmitted Info is not Encrypted

Meaning of Grades and Symbols

- A = Above Average Overall Privacy
- = Average Overall Privacy в
- C = Below Average Overall Privacy = Bad Privacy Practice

Summarization

= Good Privacy Practice = Neutral Privacy Practice

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Standardization

Summarization

Acme



Information not collected or used by this site: social security number & government ID, financial, health, location.

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= Good Privacy Practice

P







one size fits all

user education









Privacy Choice: Current State

 ← Settings ξζζζ PRIVACY 	$ \Box$ \times Find a setting ρ			
General	Change privacy options			
Location	Let apps use my advertising ID for experiences across apps (turning this off will reset your ID)			
Camera	• Off			
Microphone	Turn on SmartScreen Filter to check web content (URLs) that Windows Store apps use			
Speech, inking, & typing	• Off			
Account info	Send Microsoft info about how I write to help us improve typing and writing in the future			
Contacts	Off Off			
Calendar	Let websites provide locally relevant content by accessing my language list			
Messaging	Off Off			
Radios	Manage my Microsoft advertising and other personalization info			
Other devices	Privacy Statement			









Privacy Choice: Current State

 ← Settings ξζζζ PRIVACY 	$ \Box$ \times Find a setting ρ			
General	Change privacy options			
Location	Let apps use my advertising ID for experiences across apps (turning this off will reset your ID)			
Camera	• Off			
Microphone	Turn on SmartScreen Filter to check web content (URLs) that Windows Store apps use			
Speech, inking, & typing	• Off			
Account info	Send Microsoft info about how I write to help us improve typing and writing in the future			
Contacts	Off Off			
Calendar	Let websites provide locally relevant content by accessing my language list			
Messaging	Off Off			
Radios	Manage my Microsoft advertising and other personalization info			
Other devices	Privacy Statement			





fragmented ecosystem

difficult to find

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an see my stuff?	~	
an contact me?	· ·	
lo I stop someone from ring me?	✓ .d	
See All Settings		
Like	ACCITY YOU	







Conversation-first Interfaces



amazon

Hey Siri, is the weather nice in





The Rise of Conversational UI



Tomaž Štolfa in **The Layer** 10 March · 11 min read

The Future of Conversational UI Belongs to Hybrid Interfaces

2016 is the year of everything conversational. Messaging apps are taking over the world and app store rankings with incredible retention and engagement rates. Every community, marketplace, ondemand service, dating app...



























Appeal to new tech adopters





Appeal to existing users

Appeal to new tech adopters





Appeal to existing users

2.

Appeal to new tech adopters

Message

An intuitive way to communicate privacy policies adjust privacy preferences





1-Communicating Privacy Policies

















What is this Privacy Policy for?

This privacy policy is for this website [www.websitename.co.uk] and served by [### COMPANY NAME ###] and governs the privacy of its users who choose to use it.

The policy sets out the different areas where user privacy is concerned and outlines the obligations & requirements of the users, the website and website owners. Furthermore the way this website processes, stores and protects user data and information will also be detailed within this policy.

The Website

This website and its owners take a proactive approach to user privacy and ensure the necessary steps are taken to protect the privacy of its users throughout their visiting experience. This website complies to all UK national laws and requirements for user privacy.

Use of Cookies

This website uses cookies to better the users experience while visiting the website. Where applicable this website uses a cookie control system allowing the user on their first visit to the website to allow or disallow the use of cookies on their computer / device. This complies with recent legislation requirements for websites to obtain explicit consent from users before leaving behind or reading files such as cookies on a user's computer / device.



Message PriBot..

DriBc





















Voicing User Concerns



Providers traditionally say what they want









Users' concerns might not be covered



Providers traditionally say what they want

Voicing User Concerns









Users' concerns might not be covered



Providers traditionally say what they want

Voicing User Concerns





PriBots activate the two-way channel





2-Setting Privacy Preferences



					Timeline	About Friends	Photos Me	ore -
				About				
		Update Info 1	View Activity Log 9 ····	Overview				
Timeline About F	riends 353 Photos	More -		Work and Education				🚊 January 17, 1987
				Places You've Lived				
💉 💽 Stat	tus 🖻 Photo / Video 下	Life Event		Contact and Basic Info				
	Whatle on your mind?			Family and Relationship	os			
	what's on your mind?			Details About You				
			Public - Post	Life Events				
Contact and Basic Info	Facebook	The Parameters						
Family and Relationships	- Add other phones			DN				
Details About You				Birthday	January	≜ 17 ≜		
Life Events	+ Add your address			Dirtitionary	1987 1			(Dublic
	+ Add a social link							Public Erionde
	+ Add a website				0		(
	+ Add a public key				Save Ch	anges Cancel		Custom
	BASIC INFORMATION							
	Birth Date	January 17	🔒 🖉 Edit					
	Birth Year	1987						See all lists
	Gender	Male					-	

			1 About
		Update Info 1 View Activity Log 9 ····	Overview
Timeline About	Friends 353 Photos	More -	Work and Education
			Places You've Lived
💉 🗾 St	atus 🖻 Photo / Video 下 L	Life Event	Contact and Basic Info
	Family and Relationships		
	what's on your mind?		Details About You
		Public T Post	Life Events
Contact and Basic Info	Facebook	No. Realization and comparison and comparison	ON
Family and Relationships	+ Add other phones		
Details About You	+ Add your address		Birthday Ja
Life Events	+ Add a social link		19
	+ Add a website		_
	+ Add a public key		S
	BASIC INFORMATION	\sim	
	Birth Date	January 17	
	Birth Year	1987	
	Gender	Male	



Service and platform-dependent interface



			1 About
		Update Info 1 View Activity Log 9 ····	Overview
Timeline About F	Friends 353 Photos	More -	Work and Education
			Places You've Lived
💉 🗾 Sta	atus 🖻 Photo / Video 下 I	Life Event	Contact and Basic Info
			Family and Relationships
	What's on your mind?		Details About You
		Public T Post	Life Events
Contract and Passia lafa			
	Facebook	No. Realized and record and realized	ON
Patella About Veu	+ Add other phones		
Details About You	+ Add your address		Birthday Ja
Life Events	+ Add a social link		19
	+ Add a website		_
	+ Add a public key		S
	BASIC INFORMATION	\sim	
	Birth Date	January 17	
	Birth Year	1987	
	Gender	Male	

Service and platform-dependent interface **Tradeoffs for simplicity:** try finding this setting on Mobile Web version













O Ability to suggest adjustments to the user (combining notice and choice/preferences)



































Mature User Understanding

Text processing

• Question answering

Domain-specific datasets and ontologies

Graceful fallback

Recent PriBot > Typically replies in minutes

> I'm sorry. I don't have an answer about this at the moment. Maybe you can find it in our full privacy policy: <u>http://</u> <u>www.example.com/policy</u>. But I'll let you know if I get any news from the team about it!

> > GIF

Message PriBot...

Å

PriBc²





Legal Challenges

- Inherently error prone: are they legally binding?
- Accounting for false-positives and false-negatives
- The case of 3rd party PriBots: defamation possibilities?

Trusting the Machine

rule-based vs. AI-based

user backlash?

regulate the confidence level





• positive tone \rightarrow higher trust

• diversified content \rightarrow reduced habituation

PriBots' Personality









provider

3rd parties













3rd parties

Suitable for Voice Assistants





What's Next?

Privacy as a Dialogue

Rule-based Prototype

System Implementation

User studies







Questions/Feedback?

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