Assessment of personal environments in social networks

with Automatic Intelligent Internet Agents (Aigents)

Anton Kolonin, akolonin@aigents.com

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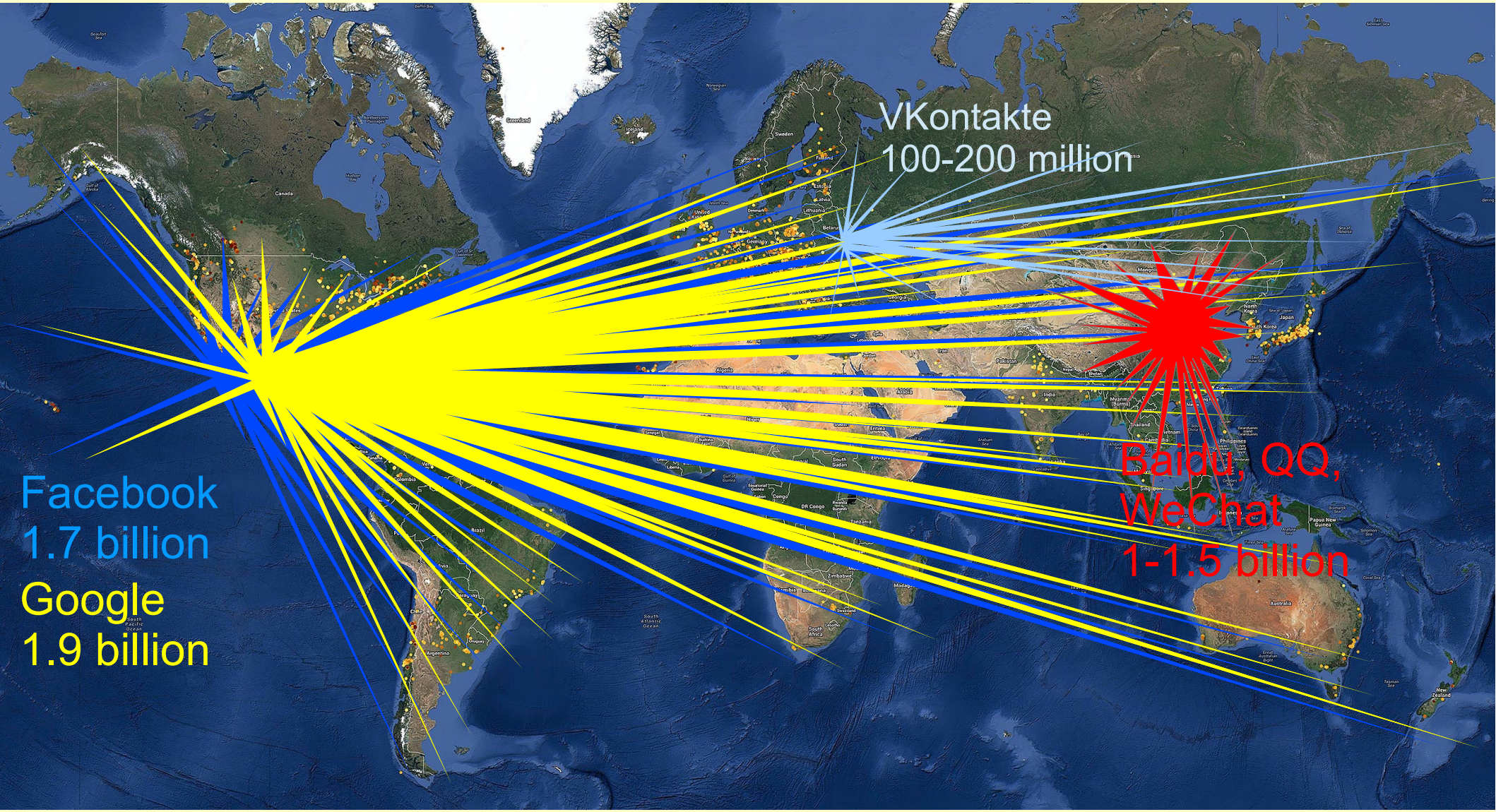
Numbers of monthly users of global social networks Google+Facebook in the world, Baidu+QQ+WeChat - in China



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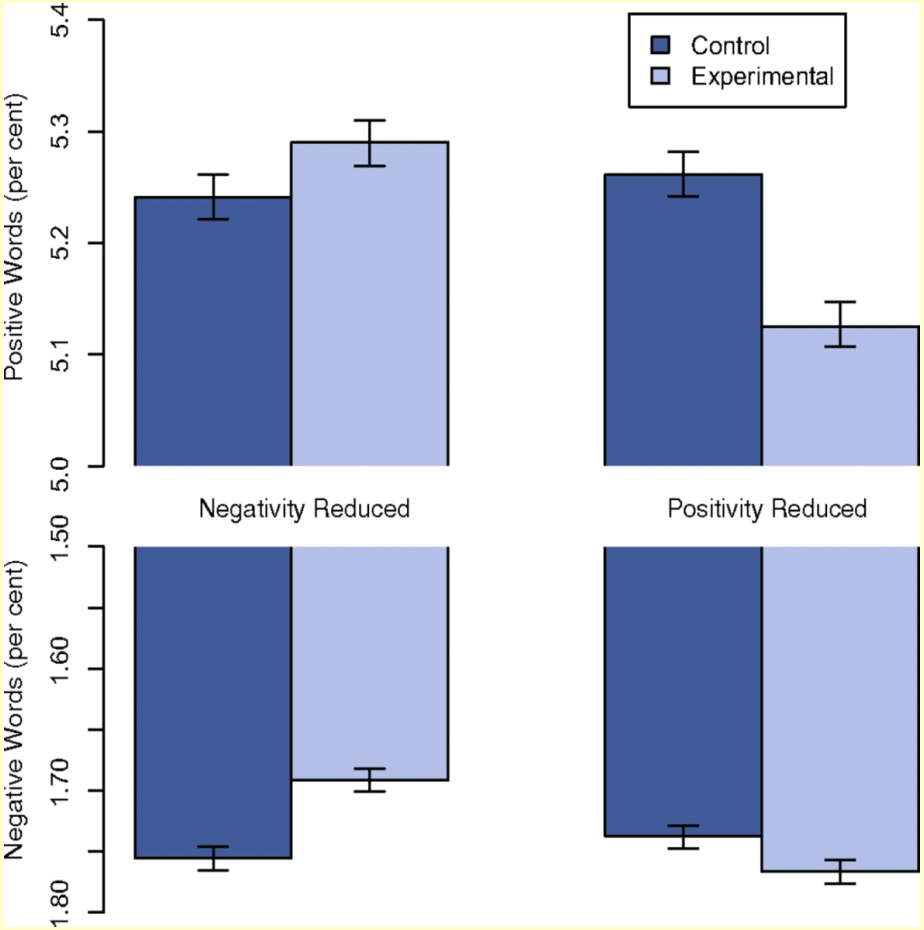
“Facebook Experiment”

By change of “average sentiment” in personal news feed, manage mood of users “positively” or “negatively” - en masse around the world



Kramer A.D., Guillory J.E., Hancock J.T. Experimental evidence of massive-scale emotional contagion through social networks. *PNAS* 2014;111(24):8788-8790.

(slide provided by Y.L.Orlov)

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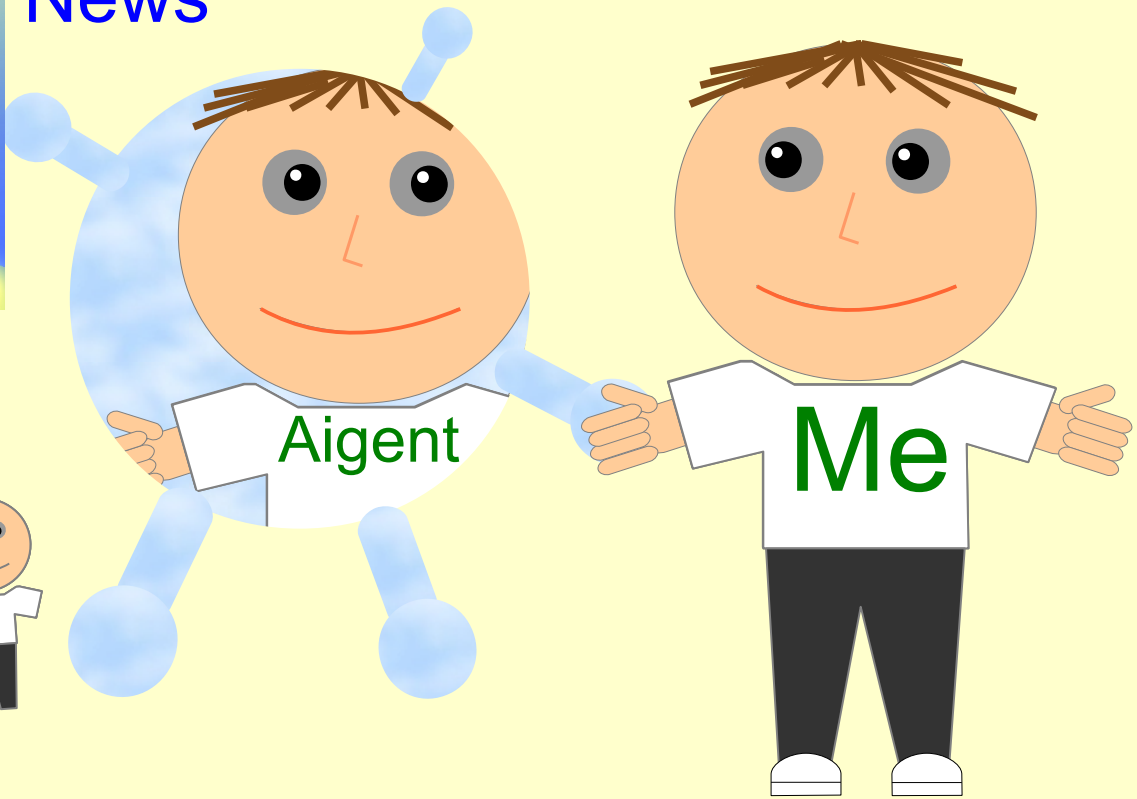
Personal Intelligent Agent

serves as a “crystal ball” in the world of social and informational networks, recognizes your preferences, knows your friends and finds what you need

News



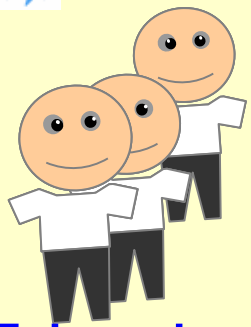
Steemit

Golos.io

Google+

VKontakte

Facebook



Friends

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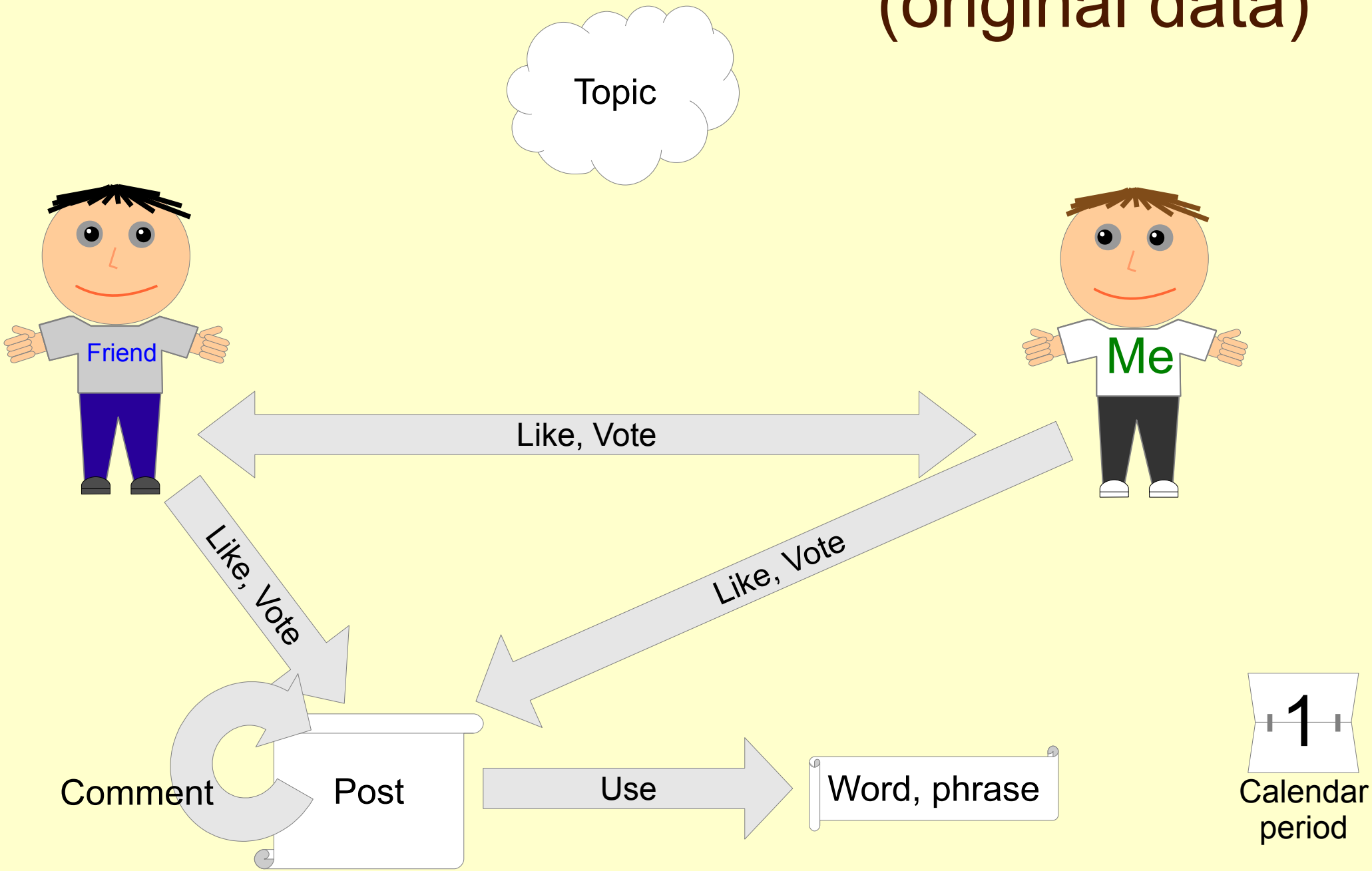
Personal Social Analytics Domain Model (original data)



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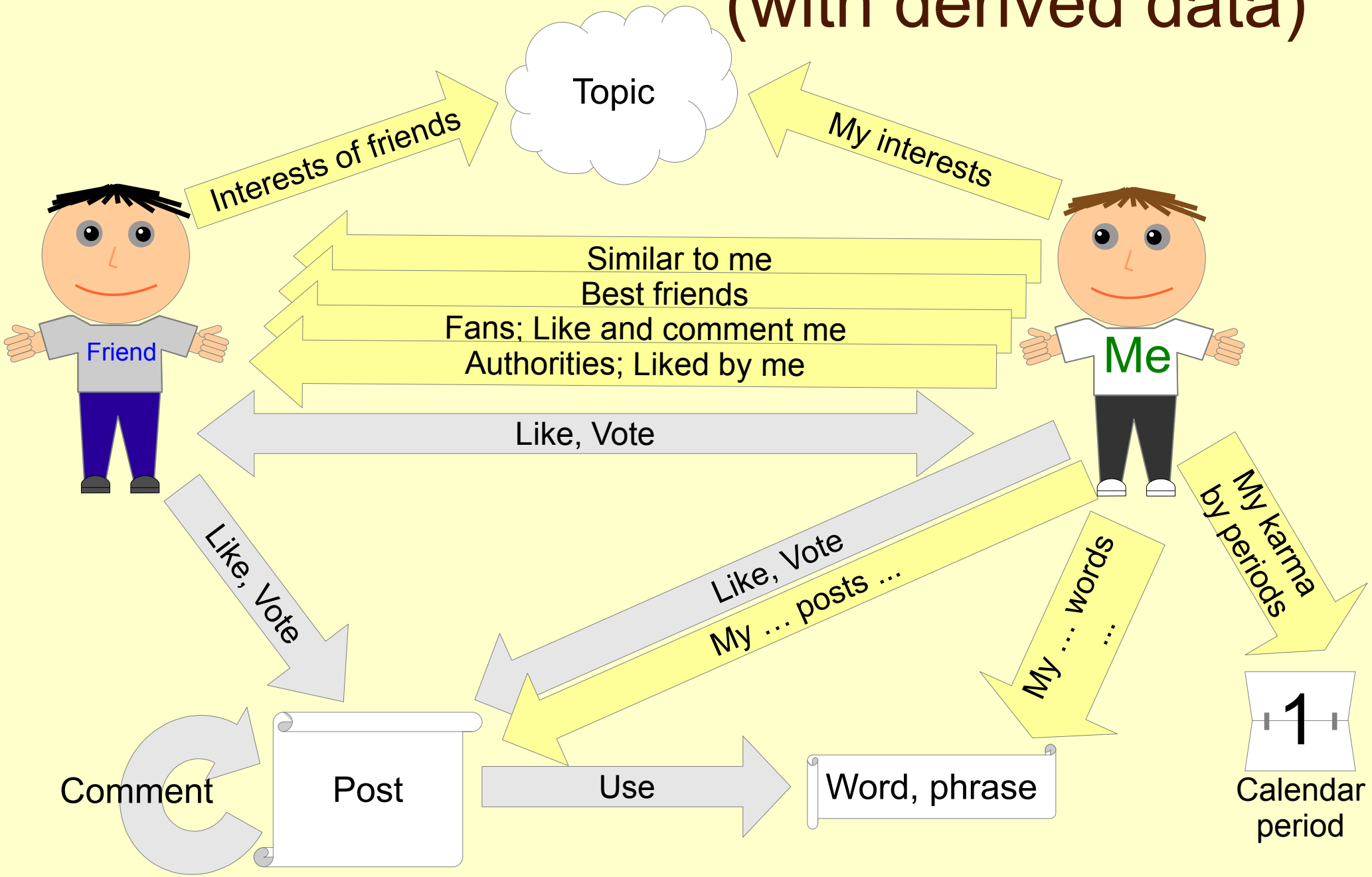
Personal Social Analytics Domain Model (with derived data)



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Personal and social analytics

Steemit
Golos.io
Google+
VKontakte
Facebook

my interests
interests of my friends
similar to me
best friends
fans
like and comment me
authorities
liked by me
my karma by periods
my words by periods
my favorite words
my posts liked and commented
my best words
my words liked and commented
words liked by me
my posts for the period

Aigents Report for Facebook
(2016-01-31 - 2017-01-31, number of posts 193)

My karma by periods

Period	Karma,%	Likes	Comments
2017-01	76	54	15
2016-12	100	55	36
2016-11	37	15	19
2016-10	66	46	14
2016-09	90	52	30
2016-08	22	16	4
2016-07	44	20	20
2016-06	45	31	10
2016-05	38	14	21
2016-04	42	26	12
2016-03	23	17	4
2016-02	66	47	13
2016-01	0	0	0

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Friends, Fans and Authorities – on Steemit

Best friends

Rank,%	Friend	My likes	Likes	Comments
100	thecryptofiend	128	214	126
39	rigaronib	91	105	81
17	dwinblood	45	84	79
16	dreemit	53	66	68
10	ausbitbank	33	101	28
9	stellabelle	41	50	50
6	steemsports	103	27	0
5	timcliff	24	58	34
5	thetruthfairy	14	141	2
5	the-ego-is-you	22	51	42
4	krnel	43	24	13

Authorities

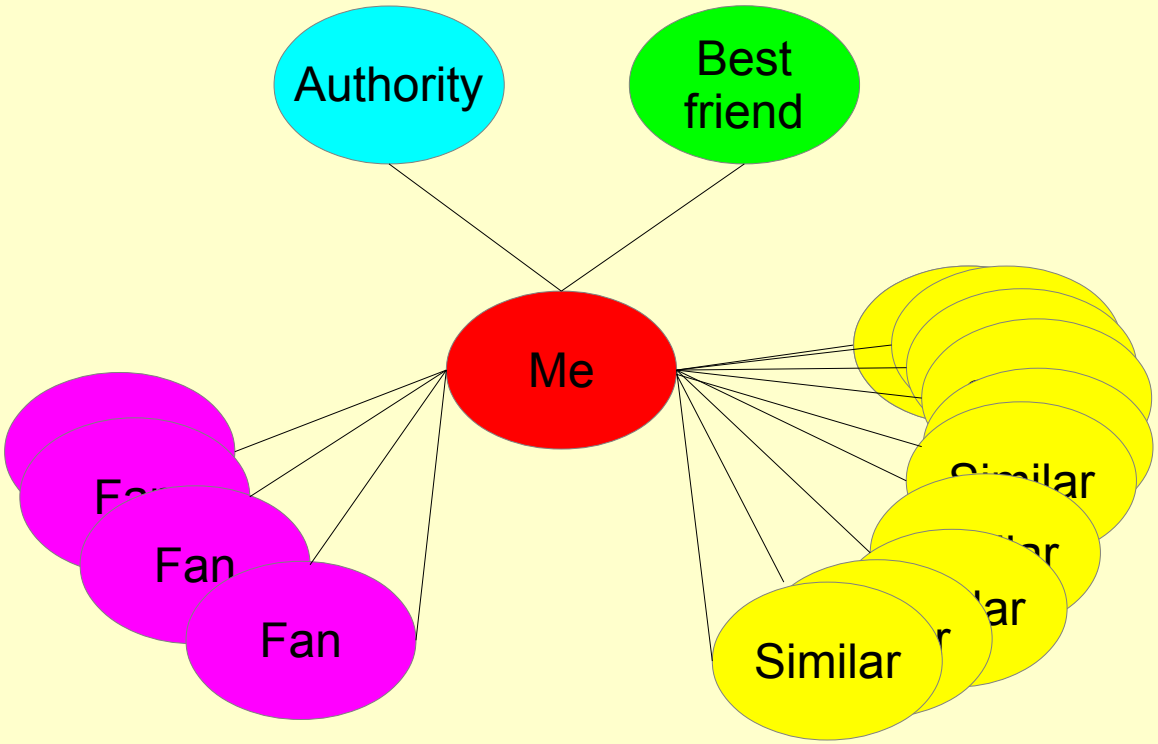
Rank,%	Friend	My likes	Likes	Comme
100	rubens9119	14	0	0
29	steemadvice	4	0	0
29	elewarne	4	0	0
29	sweetsssj	4	0	0
27	curie	65	16	0
26	wowpeach	11	0	2
26	steemsports	103	27	0
21	tanyabtc	3	0	0
21	pakganern	3	0	0
21	profanarky	3	0	0
21	hansolo	3	0	0

Fans

Rank,%	Friend	My likes	Likes	Comments
100	trans-juanmi	0	141	0
96	selwi	0	135	0
95	juliosalas	0	134	0
92	jeff-kubitz	0	125	5
63	christoph3	0	89	0
60	steemleak	0	84	0
56	pairmike	0	79	0
54	juanmiguelsalas	1	151	0
52	bue-witness	0	74	0
52	mini	0	74	0
52	healthcare	0	74	0

Similar to me

Rank,%	Friend	Crosses	My likes	Likes	Comments	Words
100	lifeworship	456	12	33	23	people know stee
96	dreemit	705	53	66	68	time up people r
94	trevor.george	572	8	29	25	people more up ti
94	stellabelle	388	41	50	50	people steemit lik
92	j3dy	569	10	25	26	people up now h
92	riskdebonair	427	7	36	13	people time like p
91	the-ego-is-you	440	22	51	42	people know ther
87	timcliff	351	24	58	34	up know see like pc
87	jamesbrown	565	4	11	9	people now up ti
86	thecryptofiend	625	128	214	126	more time people
86	biophil	622	1	27	8	people who time
85	ats-david	613	8	10	15	all people who th
85	spark	345	3	13	17	people then now
83	nonameslefttouse	509	6	6	27	time up people r
82	meesterboom	347	20	29	36	up know see like
81	rigaronib	354	91	105	81	one know up nov



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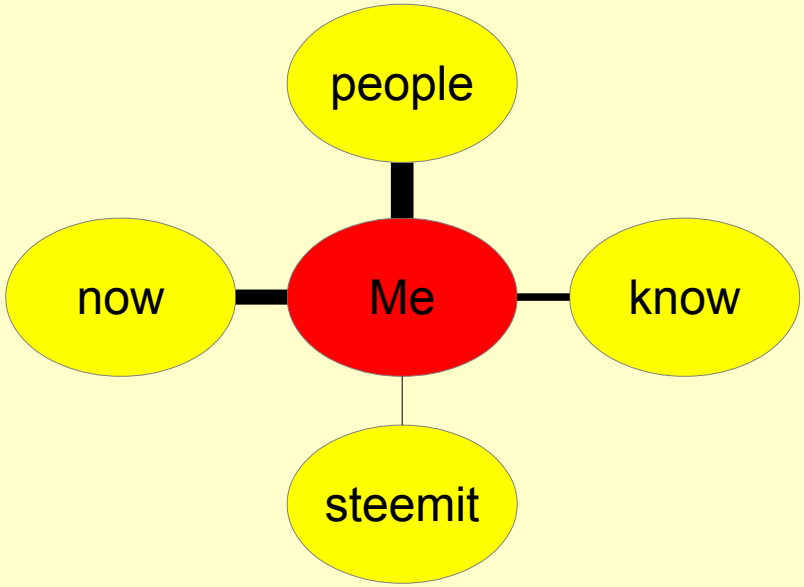
Karma and word use over time - on Steemit

My words by periods

Period	Karma,%	Likes	Comments	Words
2017-03	53	2539	154	know now find people make tupac
2017-02	100	4656	384	now earth know post people very f
2017-01	68	3162	286	alek post community now story
2016-12	81	3866	236	people now steemit know david
2016-11	35	1680	78	steemit people think post pizzagate
2016-10	29	1420	41	kataya people joma now king sun w
2016-09	5	181	51	know get like much im help pres

My favorite words

Rank,%	Word	My likes	Likes	Comments	Posts	Occurences
100	people	104	10702	672	104	407
95	now	111	11674	751	111	385
80	know	116	11036	791	116	327
74	steemit	96	9082	643	96	302
72	like	111	11082	770	111	293
69	post	113	11097	866	113	281
64	get	103	10134	707	103	261
64	way	79	8079	489	79	260
62	very	97	10140	687	97	252
62	find	99	10405	685	99	251
61	make	104	10336	734	104	249



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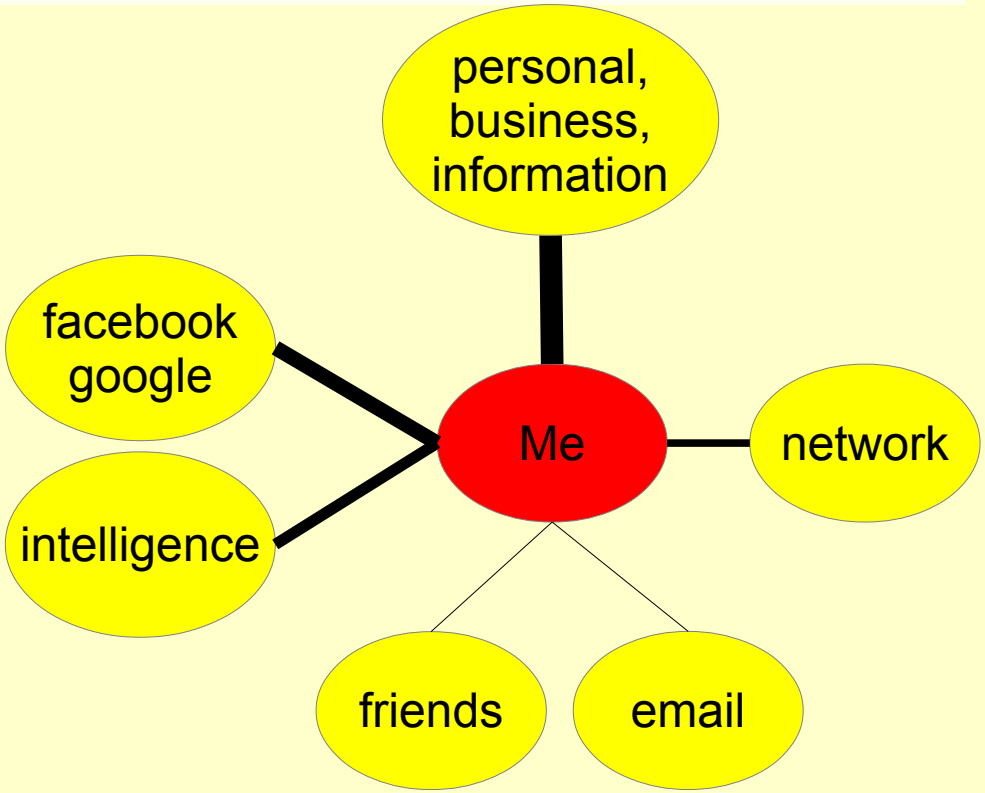
Interests and word use – on Facebook

My favorite words

Rank,%	Word	My likes	Likes	Comments	Posts	Occurences
100	social	18	77	26	33	82
68	report	3	5	2	4	32
67	web	18	62	25	29	48
58	networks	13	44	11	21	41
56	news	19	68	19	34	45
44	personal	10	64	22	18	34
44	facebook	8	46	13	10	23
37	now	15	85	24	30	33
36	google	10	40	15	17	26
34	email	6	23	6	10	23
34	fresh	1	3	0	1	8
32	list	2	4	1	2	10
31	intelligence	8	63	24	19	31
31	steemit	3	5	2	3	11
31	vkontakte	3	5	2	3	11
29	periods	2	4	1	2	9
28	business	8	32	15	17	25
26	information	9	41	17	21	26
25	get	5	16	8	10	20
25	id	1	1	1	1	6
25	options	1	3	0	1	6
25	user	4	28	4	10	24
25	выявление	1	9	4	1	6
25	friends	6	13	9	10	17
24	posts	4	12	2	7	16
24	make	6	23	5	8	13
24	data	9	43	9	15	17
24	network	8	25	6	12	15
23	liked	4	12	2	5	11
23	bot	4	16	11	7	15
23	agents	4	22	10	8	17
21	activity	4	9	4	5	10

My interests

Topics	Number of posts
business, data, information, networks, personal, user, web	63
email, facebook, get, google	34
intelligence	20
network	14
friends	10
email, make	9



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Similarity over friends – on Facebook

Similar to me

Rank,%	Friend	Crosses	My likes	Likes	Comments	Words
100	Aigents	375	1	26	40	social web news networks personal now report intelligence more information google bus
52	Misha Kolonin	17	8	8	11	more time make good like need computer build over
47	Сергей Шумский	15	1	5	1	intelligence learning cognitive human machine best
23	Georgy Dralkin	33	4	7	5	более агентов другие сам системы пользователя этом сегод
22	Vladimir Zavialov	12	6	2	6	time время event антон сами было лично думать
18	Владимир Зюбин	7	0	0	2	webmind проект время действительно
17	Виктор Голиков	14	3	10	11	сети агентов агент интеллекта антон планетарного решение назад
16	Ilya Nenashev	19	2	1	5	будет новости новых поиска пользователя сами было агентами одно
15	Gleb Protopopov	1	1	8	1	google
13	Victor Smirnov	10	0	5	2	области может бена россии сами ии opencog выпустить работы интересно

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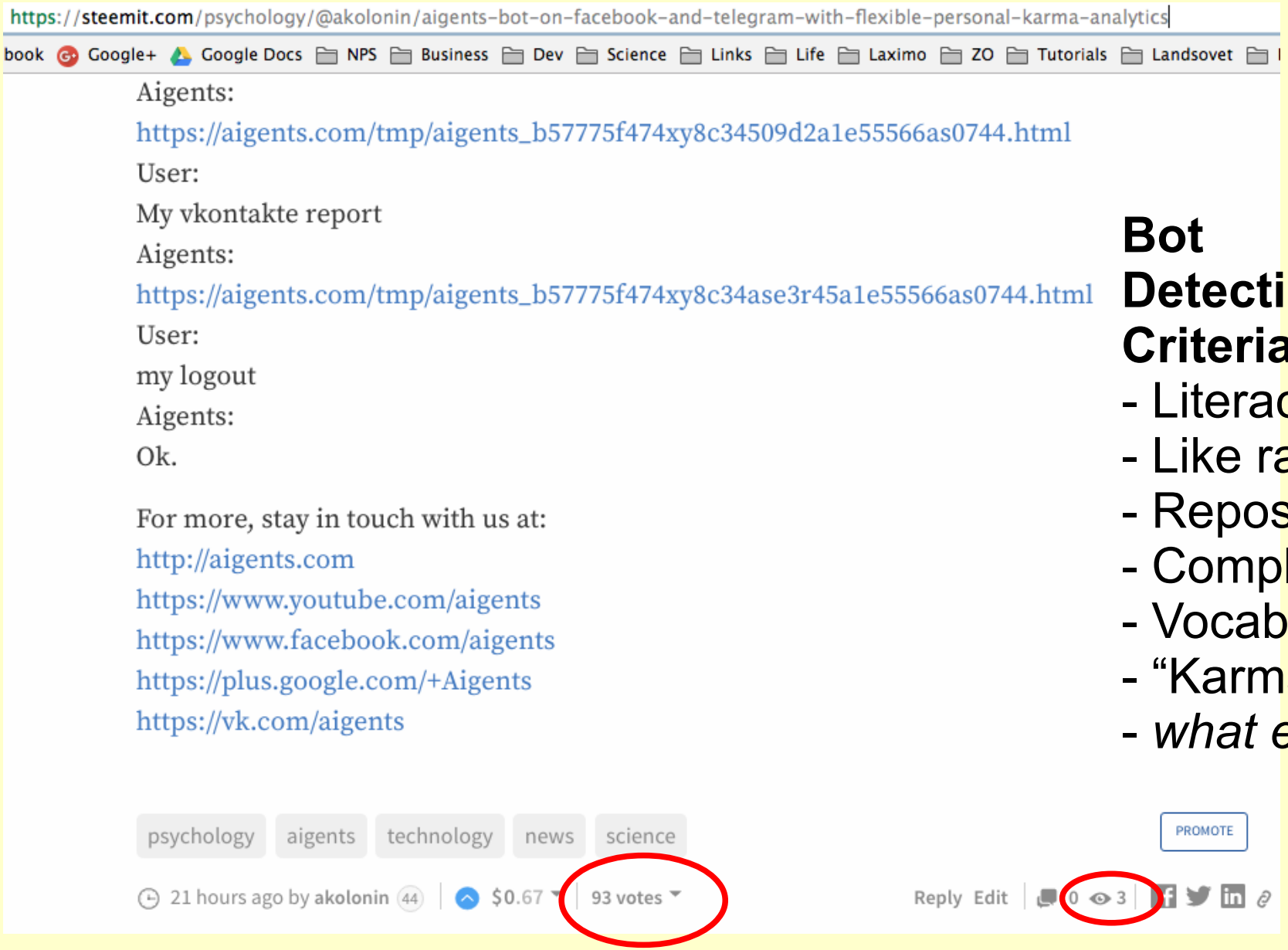
Personal and social analytics – “Botness”



Bot Detection Criteria:

- Literacy - high
- Like rate – high
- Repost rate - high
- Complexity - low
- Vocabulary – poor
- “Karma” – low?
- *what else?*

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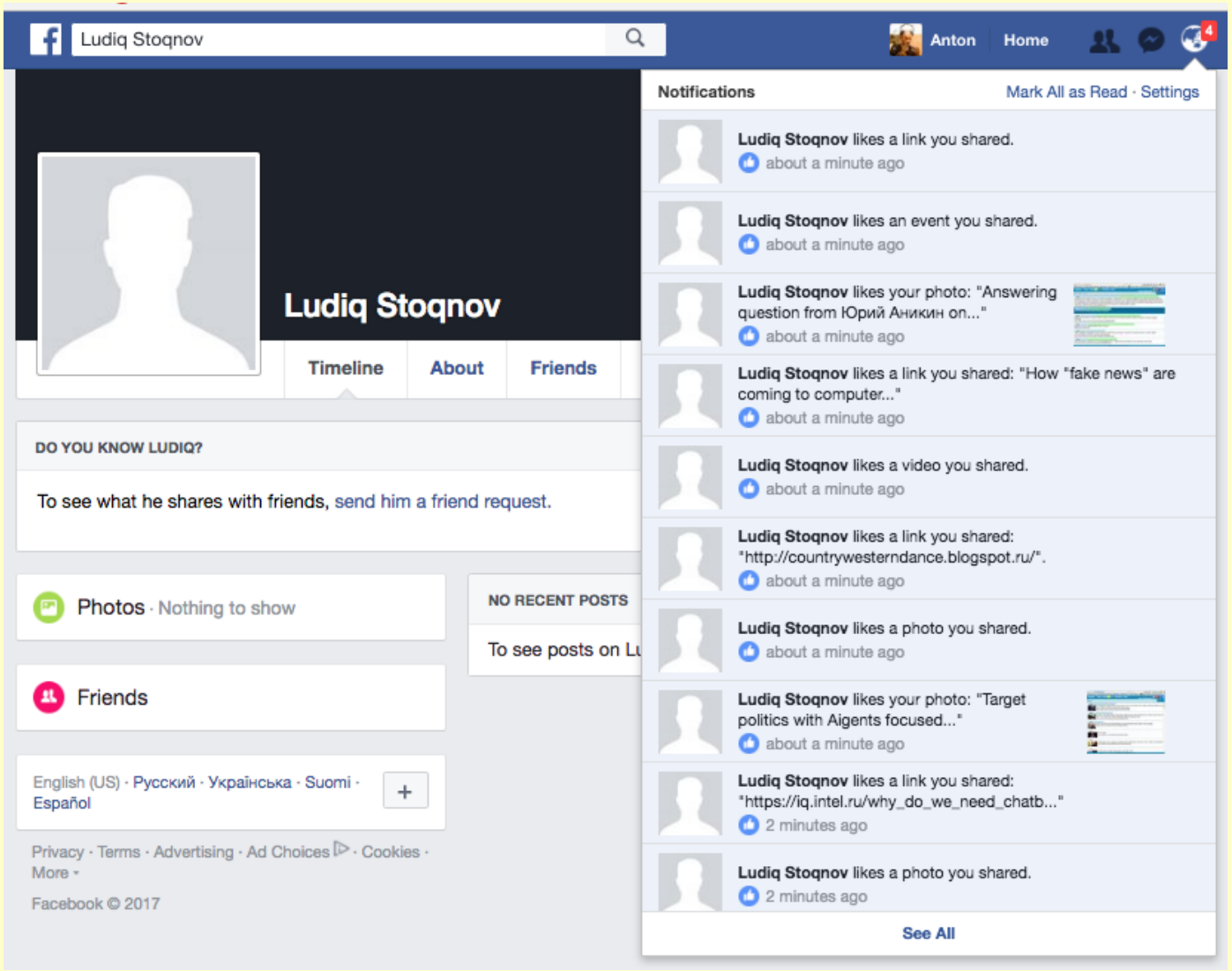
Typical “portrait” of a “bot”



Bot Detection Criteria:

- Literacy - high
- Like rate – high ✓
- Repost rate - high
- Complexity - low
- Vocabulary – poor
- “Karma” – low ✓

+ No friends

+ No likes

+ No history

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Personal analytics based on text with IBM Watson “Personality Insights”

Studying human social environment and state with social network data

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***Abstract*—The paper describes approach, practical solution and intermediate results for self-driven exploration of personal interests structure and nearest social environment for an individual in order to correct their own behavioral patterns and interactions with communication partners on social networks on the Internet.**

***Keywords*—collective consciousness; mental state; personal awareness; social network**

I. Introduction

Tight connectivity of humans in modern world-wide social networks is rapidly increasing and now is getting close to connectivity of human brain. Importance of the latter transition for evolution and humanity could not be underestimated because of amount of nodes and links in modern computer networks is exponentially growing with addition of artificial agents being involved in “hybrid” human-computer networks. It becomes critically important to understand phenomena of social interactions in such over-connected societies, so that effects of social behavior based on collective consciousness could be well understood, predictable and manageable – from perspective of humans exposed to modern information networks and from perspective of entire society.

One of the key factors of modern social communities across the world is high volatility and scale of social dynamics, with social clusters being created, updated, merged, split and disappeared rapidly, which leads to qualitative changes in principals of social organization [1]. The impact of social network communications on each individual interacting with Internet on daily basis is normally underestimated by average human. At the same time, it can be significant enough to alter state of consciousness of a single person or entire community [2]. That means, having ability to measure impact of digital social environment of a human or society instrumentally would be beneficial for a person or entire society, so they could adapt to the social environment and/or correct their course of action in its regard.

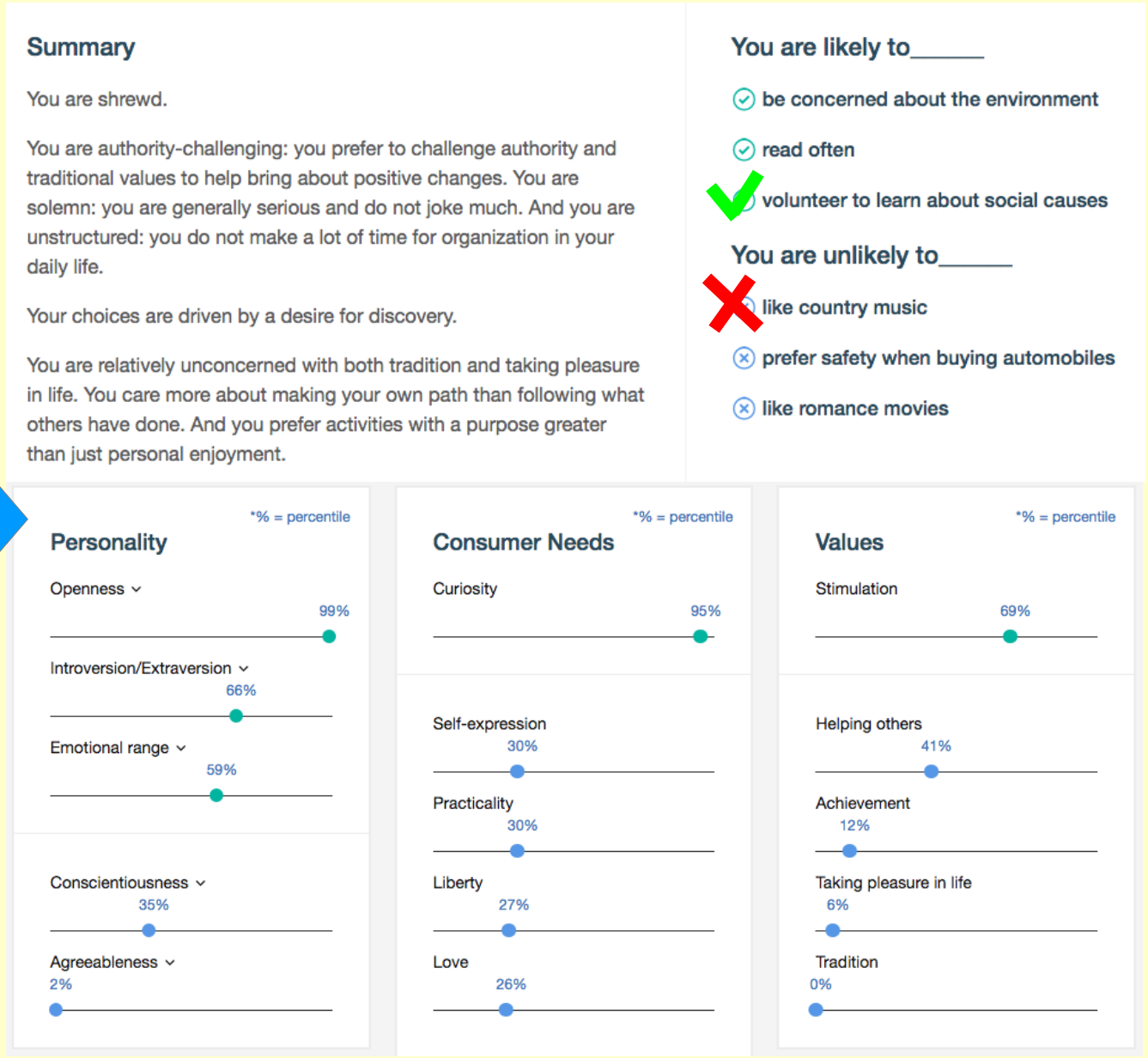
II. Approach and practical solution

We consider approach for building computational model encompassing knowledge acquired by entire society by means of evidence supplied by each of it members, called “social evidence-based knowledge representation” [3]. In this work we focus on the nearest social surrounding of a person interacting with social networks – in attempt to build personal mental model identifying contextual clusters of private interest as well as capture structure if inter-personal relations in the nearest environment, building collective consciousness model of the community that person is belonging to. This would potentially let person identify their state within their social environment and increase their personal awareness.

To achieve this goal, we build software application which extracts social network data for specific user, given their agreement and then extracts patterns of “natural classification” [4] from it and evaluate different sorts of social relationship within the social cluster the user belongs to.

Fig. 1. Using “natural classification” technology to unravel “clusters of interests” of given user (upper table) and “clusters of fiends’ interests” (bottom table) with Aigents Report for social network.

We use Aigents software application and web service [5] in order to collect information on personal environment of a human in social network. Each user of the application can connect Aigents service to number of social networks (such as Facebook, VKontakte or Google+) and let it collect public data from it. Most of social networks are substantially restricted in regard to scope of information that can be collected to endorsed application programmatically, so in most



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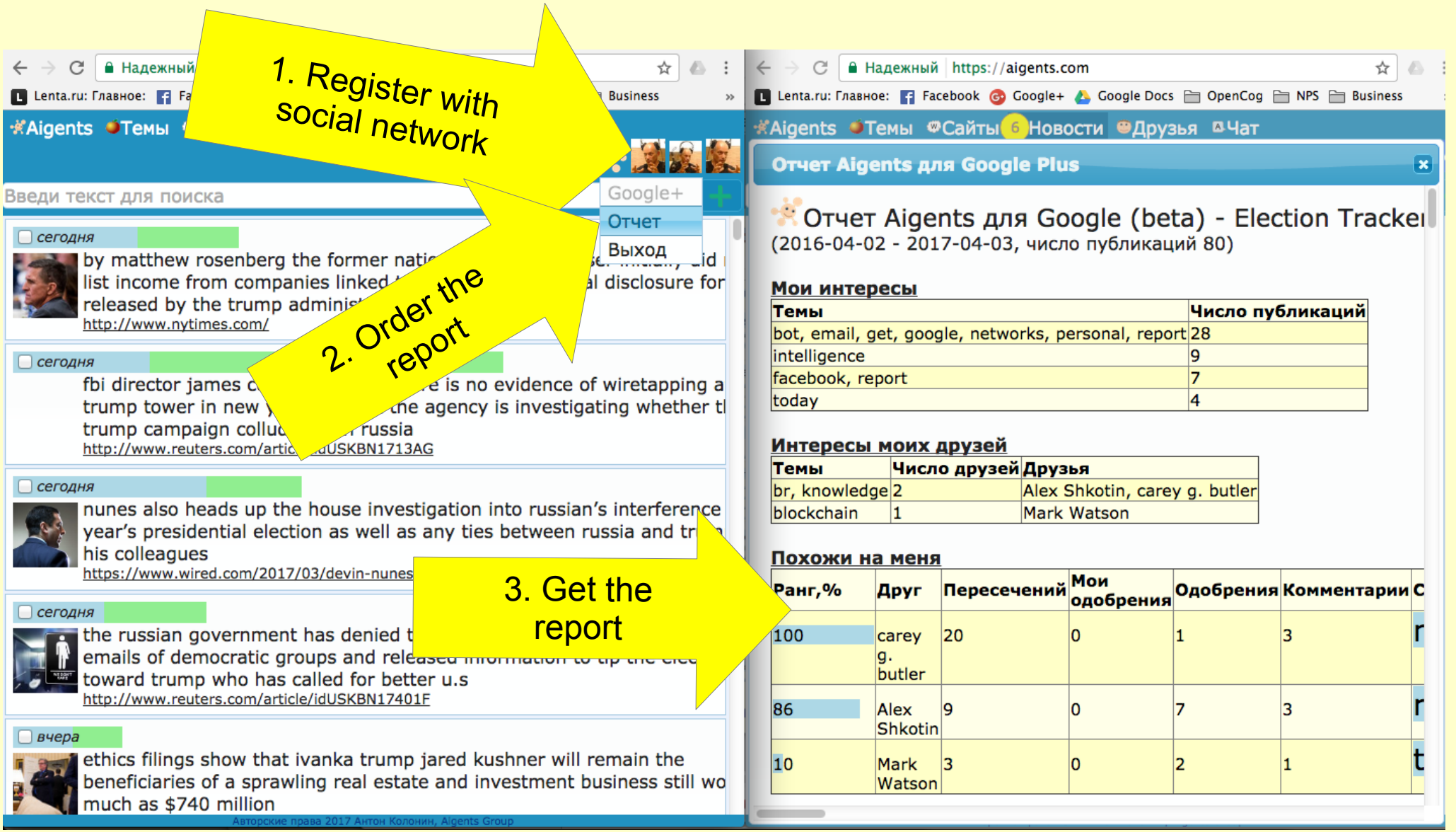
Personal analytics on Aigents site – how to start using at https://aigents.com/ ?



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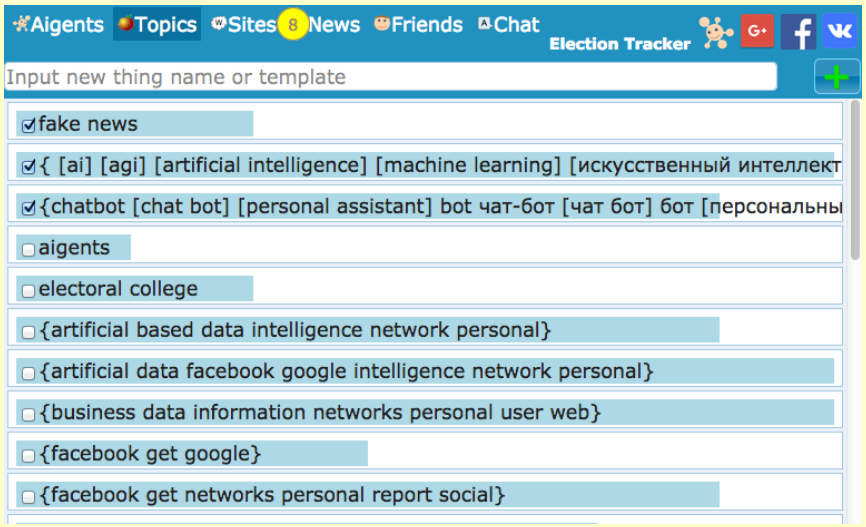
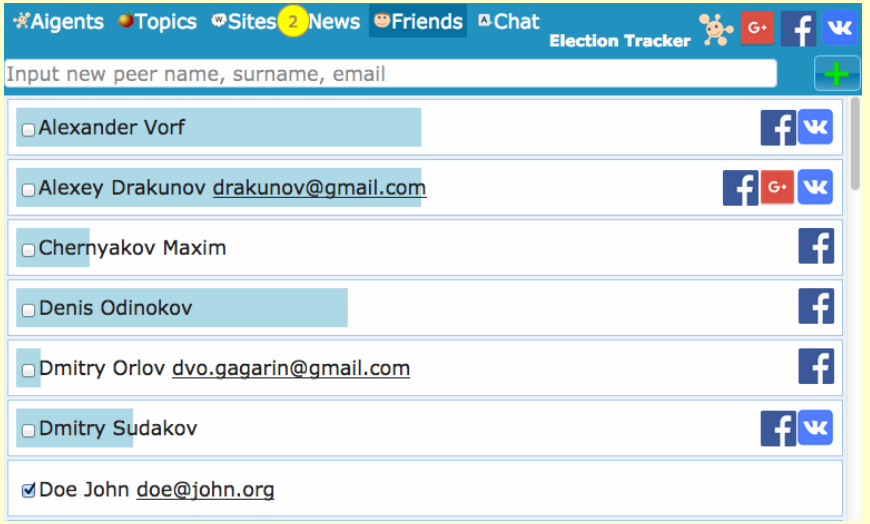
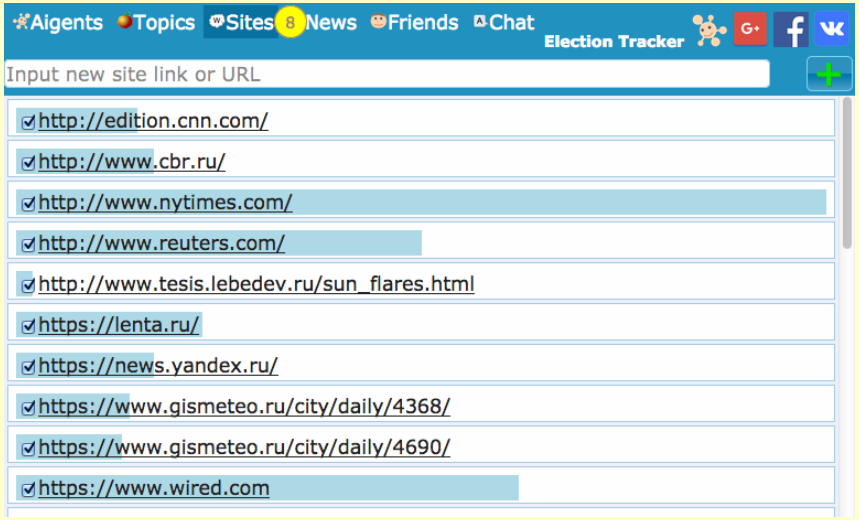
I teach my Aigent while it learns from me

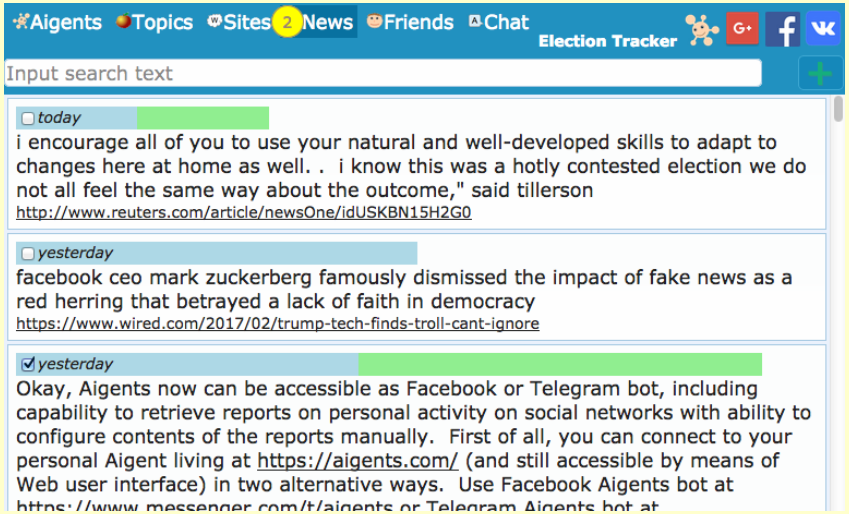
It learns from my interactions with friends





I adjust my profile and provide feedback





It extracts and delivers information having it sorted out by relevance

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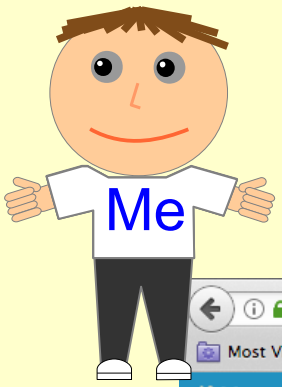
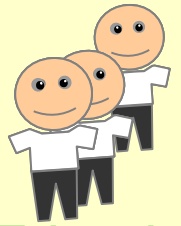
News relevance assessment
Personal and Social relevances





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wired

https://www.wired.com/2017/02/trump-tech-finds-troll-cant-ignore

2017-02-01
apparently out of a commitment to "freedom of speech with clear limits." and the day after the election facebook ceo mark zuckerberg famously dismissed the impact of fake news as a red herring that betrayed a lack of faith in democracy
https://www.wired.com/2017/02/trump-tech-finds-troll-cant-ignore

2017-02-01
artificial intelligence inside the poker ai that out-bluffed the best humans
https://www.wired.com

2017-02-01
facebook ceo mark zuckerberg famously dismissed the impact of fake news as a red herring that betrayed a lack of faith in democracy
https://www.wired.com/2017/02/trump-tech-finds-troll-cant-ignore

2017-02-01
fake news overtook facebook
https://www.wired.com/2017/02/trump-tech-finds-troll-cant-ignore

2017-02-01
social media facebook reboots trending topics—again—as fake news festers
https://www.wired.com/category/business

2017-01-30
artificial intelligence google's go-playing ai opens the door to robots that learn
https://www.wired.com

2017-01-30
in a world full of fake news spin
https://www.wired.com/2017/01/review-kz-ate-hi-fi-earphones

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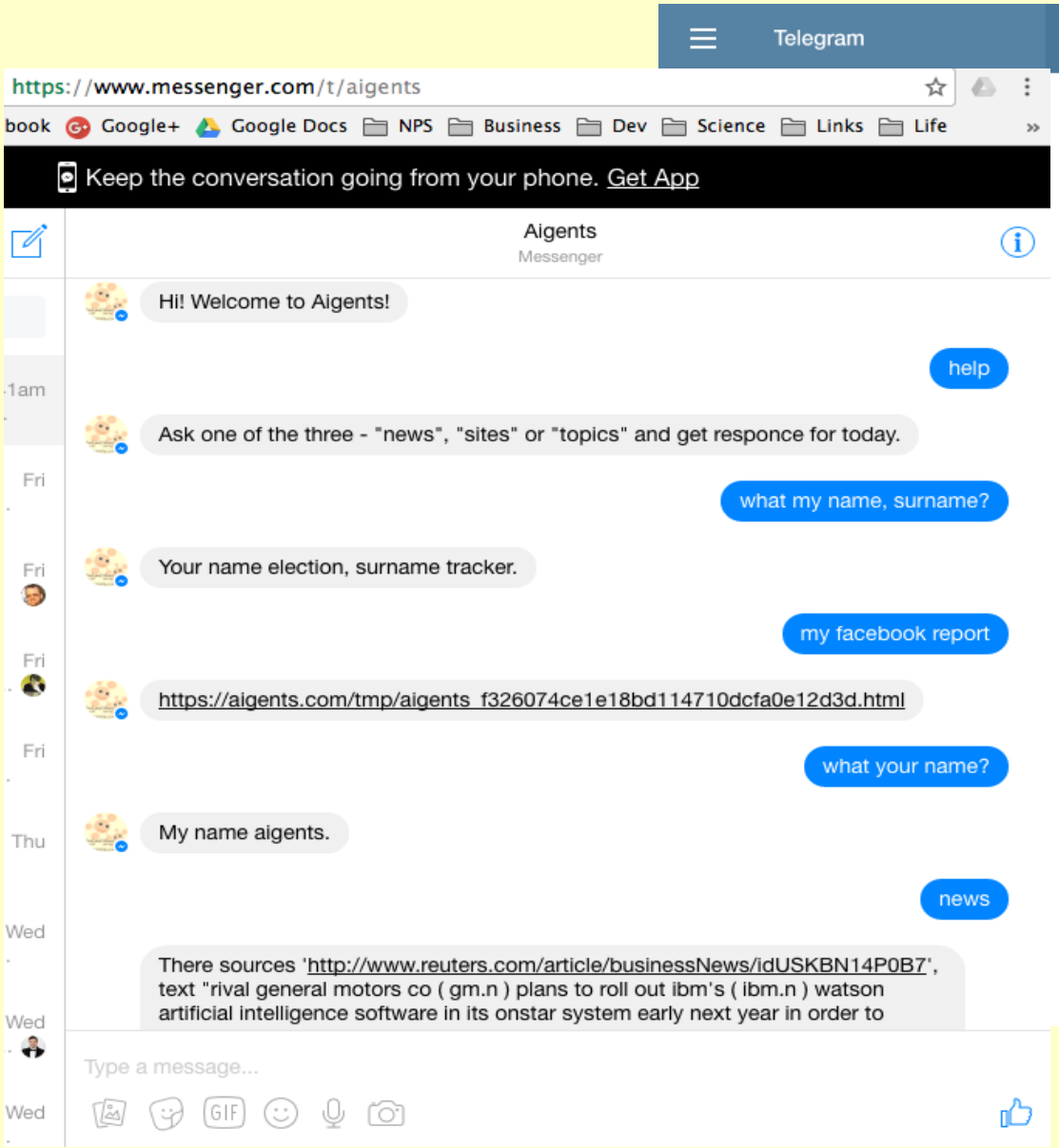
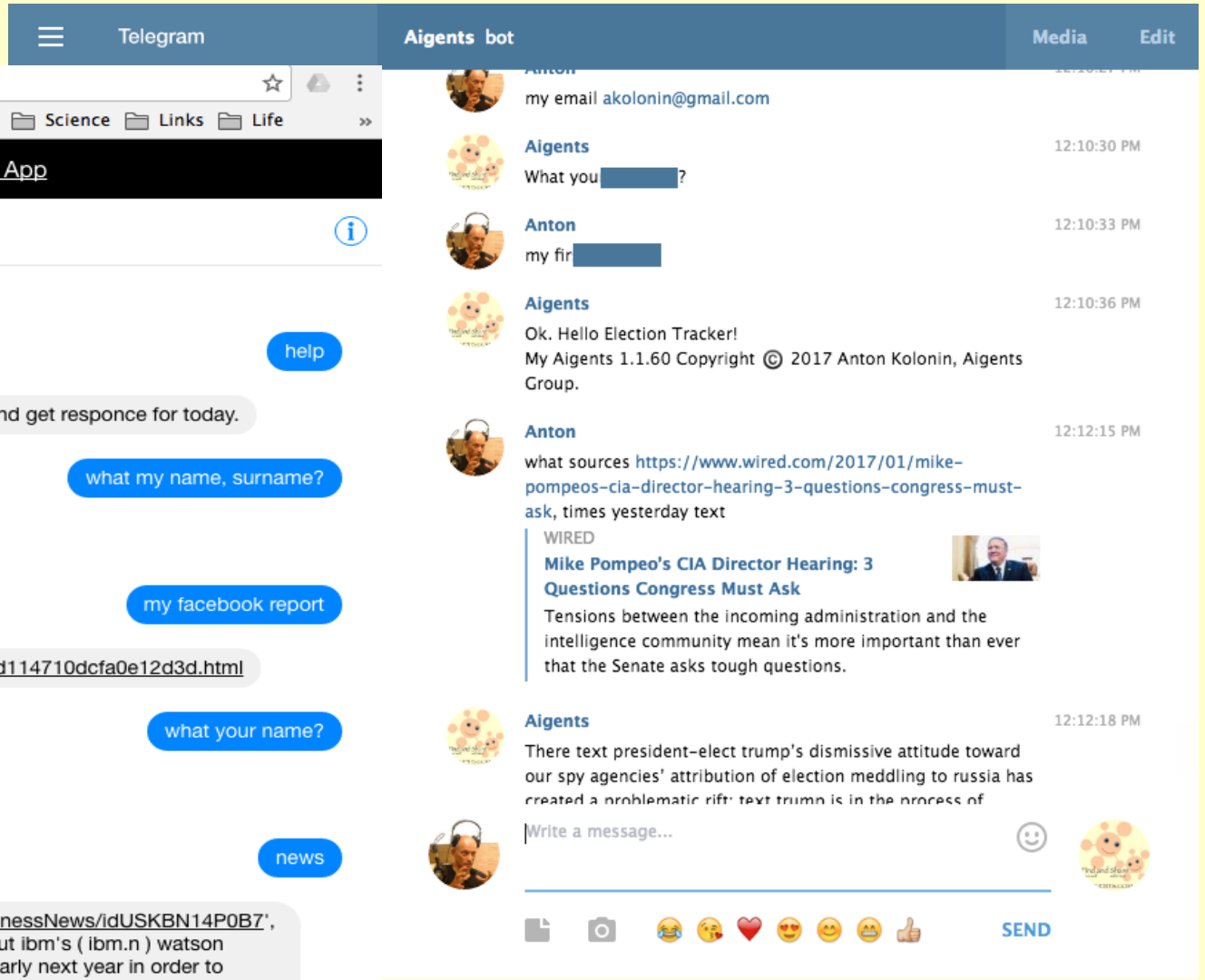
Personal social analytics with Aigents and news monitoring – now available via chat-bots in Telegram (@AigentsBot) and Facebook Messenger (Aigents)





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Facebook: https://www.facebook.com/aigents
Facebook Messenger:
https://www.messenger.com/t/aigents
Telegram Messenger:
https://web.telegram.org/#/im?p=@AigentsBot

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