Aigents - overview

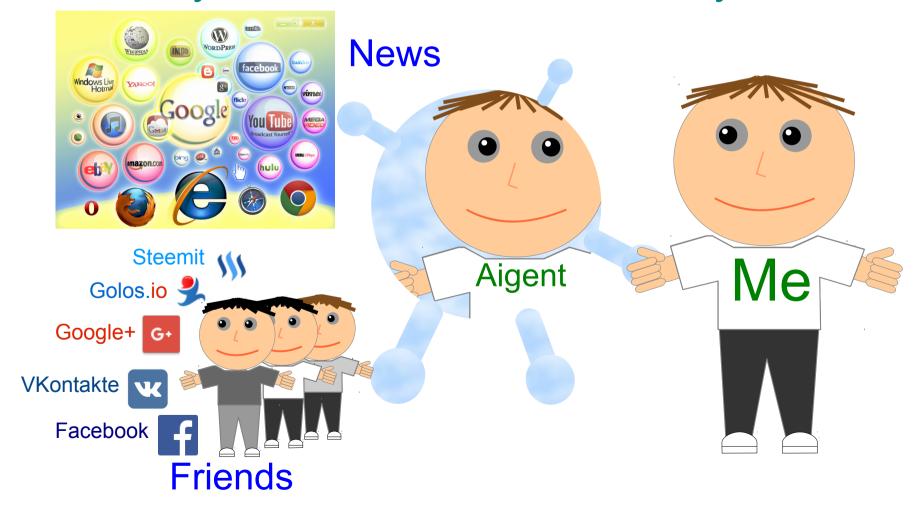


from 7 points of view

Anton Kolonin, akolonin@aigents.com

Personal Intelligent Aigent

serves as a "magic mirror" in the world of social and informational networks, recognizes your preferences, knows your friends and finds what you need



7 points of view from 3 perspectives

Product

Technology

Market

Highly Personalized News Aggregator

Adaptive Intelligence Engine

Social Evidence-based Cognitive Model

Semantic Chat Bot

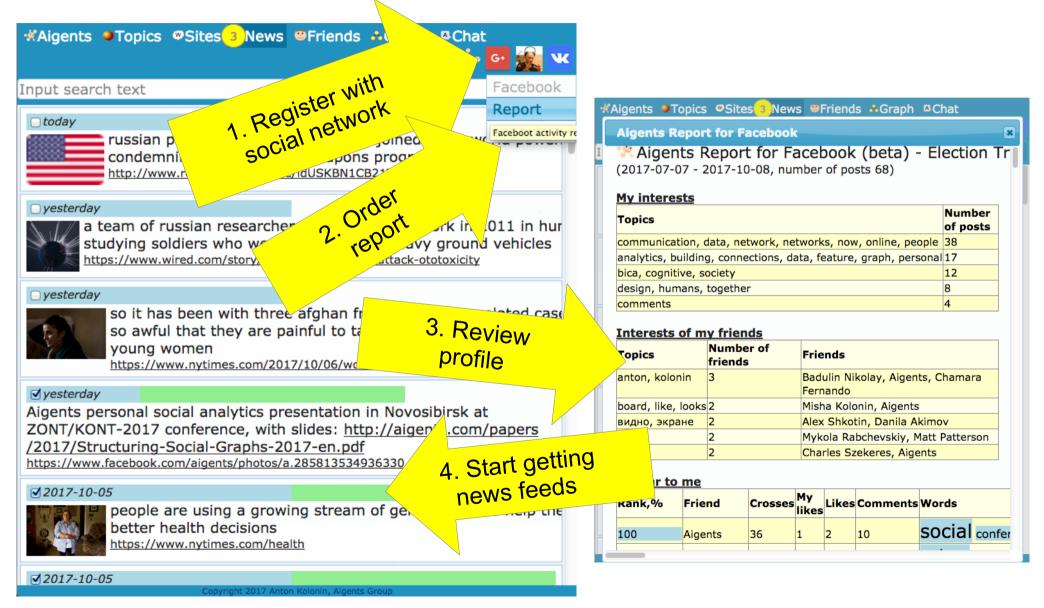
Personal and Corporate Assistant

Rersonal Social Analytics

Friends

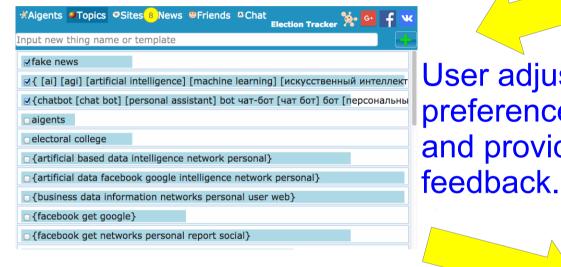
Intelligent Multi-agent Marketplace

Highly Personalized News Aggregator Start using at https://aigents.com/ today!



Highly Personalized News Aggregator

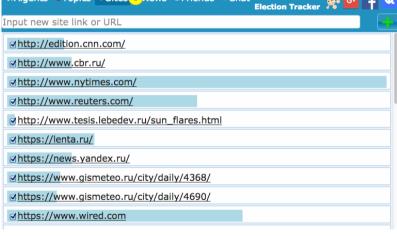
Agent figures out initial set of information sources and text patterns from online data.







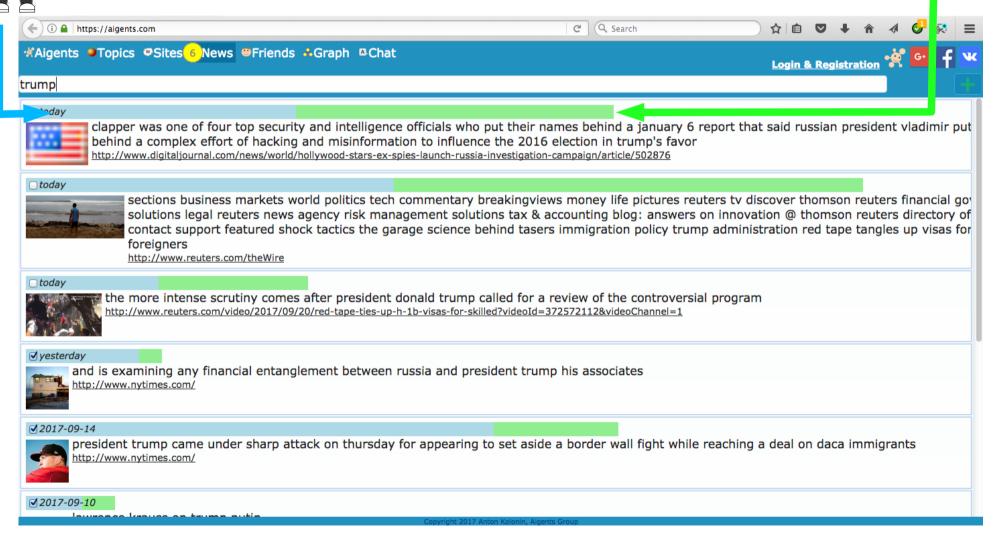




Agent finds, extracts and delivers information with relevance assessed.

Highly Personalized News Aggregator

- Monitoring and Extraction with Personal and Social relevances



Friends

Highly Personalized News Aggregator Unified approach: Different cases

Classification

Entity Extraction

Property Attribution

Category:
"Healthcare"

tylenol
acetaminophen
placebo

Entity (Case): "Treatment: Healing anxiety with Tylenol"

significantly reduce feelings study

HAS

they began writing, half of each group received acetaminophen while the other half swallowed a placebo. Even among those people who wrote about death, the Tylenol takers set bail at roughly \$300—a sign that acetaminophen may significantly reduce feelings of existential anxiety, explains study lead author Daniel Randles, a PhD candidate in UBC's department of... psychology.

Here's the Tylenol twist: Before

acetaminophen may significantly reduce feelings of existential anxiety, explains study lead author Daniel Randles.

Brand: Tylenol

Substance: acetaminophen

Reliability: medium

Effect: positive

Diagnosis: Anxiety

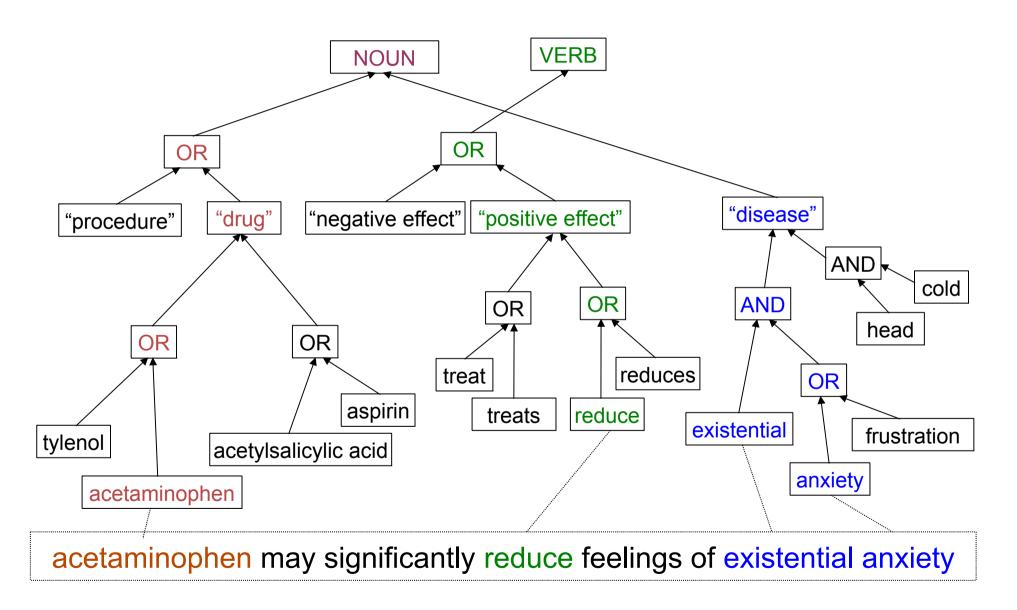
Reporter: Daniel Randles

acetaminophen may reduce anxiety explains

acetaminophen may significantly reduce feelings of existential anxiety, explains study lead author Daniel Randles.

Highly Personalized News Aggregator

Automatic text classification and extraction of entities and their properties



Highly Personalized News Aggregator Representing complex hierarchical patterns

```
<pattern> := <token> | <regexp> | <variable> | <set>
<set> := <conjunctive-set> | <N-gram> | <syn-set>
<conjunctive-set> := ( <pattern> * )
<N-gram> := [ <pattern> * ]
<syn-set> := { <pattern> * }
                   Examples
{[$description catheter] [$coating coating] [$inner-diameter
    {diameter inner-diameter}] [$tip tip] [$pattern pattern]}
X
Convey Guiding Catheter. Unique hydrophilic coating.
    Small atraumatic soft tip. Ultra-thin 1 × 2 flat wire braid pattern
{ coating : 'hydrophillic', description : 'convey guiding',
    pattern: 'ultra-thin 1 × 2 flat wire braid', tip: soft }
```

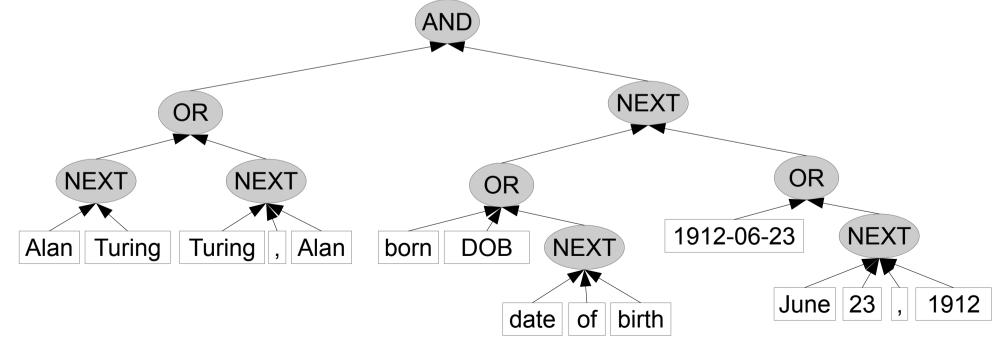
Highly Personalized News Aggregator

News are detected by means of hierarchical "patterns" recognizable by Aigents pattern matching engine (like "pattern" for identifying a particular person)

```
Alan Turing:

(
{[Alan Turing] [Turing, Alan]}

[{born DOB [date of birth]} {1912-06-23 ... [June 23, 1912]}]
)
```



Highly Personalized News Aggregator

News are detected by means of hierarchical "patterns" recognizable by Aigents pattern matching engine (like "pattern" for identifying a particular person)

```
Human Language (e.g. English):
```

```
{a abandon /abandon(ed|ing)$/ abase ... ... zygoma /zygot(e|ies|ic)$/ zymogen}
```

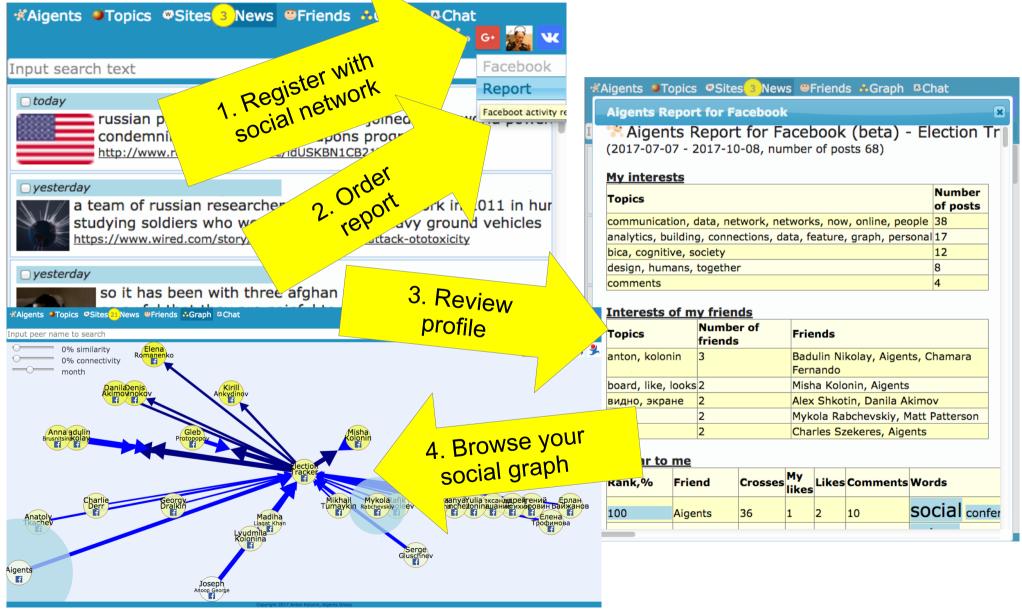
```
Abstract entity (e.g. English person):
```

```
[{Ackerley Acton ... Zaina Zaire} {Evans Jones ... Smith Taylor}] [{Evans Jones ... Smith Taylor}, {Ackerley Acton ... Zaina Zaire}]
```

Specific instance (e.g. Alan Turing):

```
{[Alan Turing] [Turing, Alan]}
[{born DOB [date of birth]} {1912-06-23 ... [June 23, 1912]}]
```

Personal Social Analytics Start using at https://aigents.com/ today!



Personal Social Analytics Domain Model (original data) **Topic** Me Friend Like, Vote Like, Vote Word, phrase **Post** Use Calendar Comment period

Personal and social analytics - relationships

Best friends

$$B_{ij} = L_{ij} * (L_{ji} + C_{ji}) / Max_{j=1,J} (L_{ij} * (L_{ji} + C_{ji}))$$

Fans

$$F_{ij} = ((L_{ji} + C_{ji})/(1 + L_{ij} + C_{ij}))/Max_{j=1,J} ((L_{ji} + C_{ji})/(1 + L_{ij} + C_{ij}))$$

Like and comment me

$$F'_{ij} = (L_{ji} + C_{ji}) / \text{Max}_{j=1,J} (L_{ji} + C_{ji})$$

Authorities

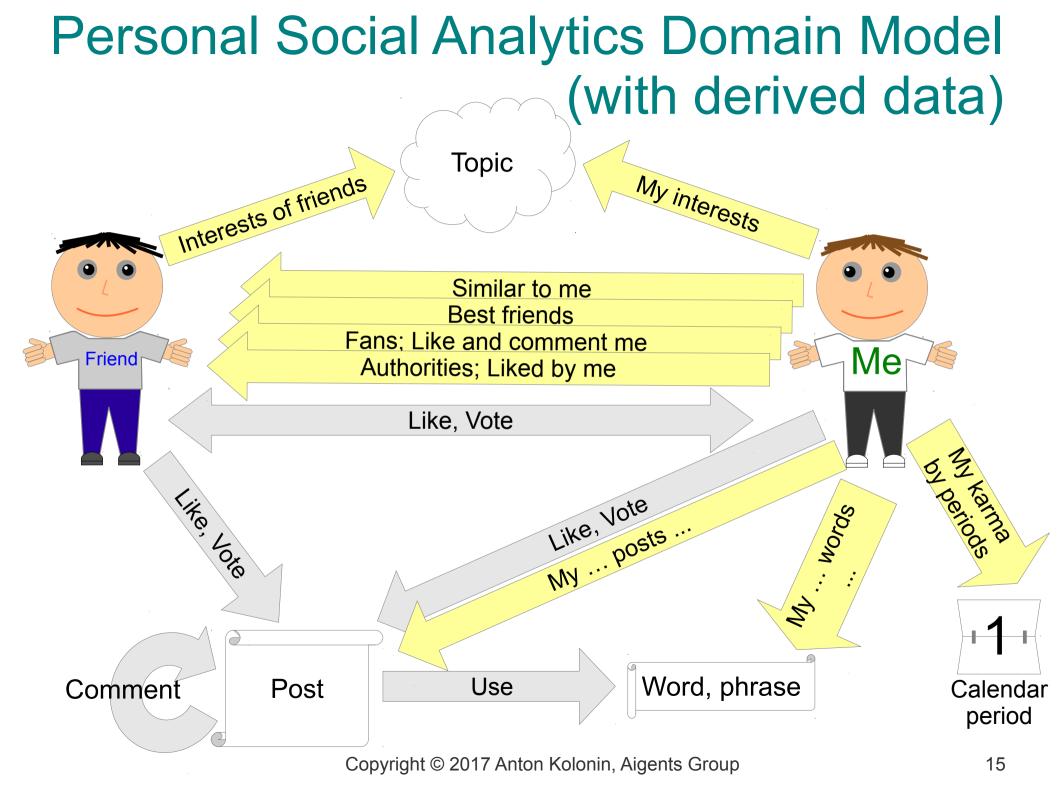
$$A_j = ((L_{ij} + C_{ij})/(1 + L_{ji} + C_{ji})) / Max_{j=1, J} ((L_{ij} + C_{ij})/(1 + L_{ji} + C_{ji}))$$

Liked by me

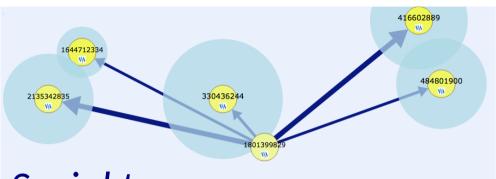
$$A'_{j} = (L_{ij} + C_{ij}) / Max_{j=1,J} (L_{ij} + C_{ij})$$

My karma by periods

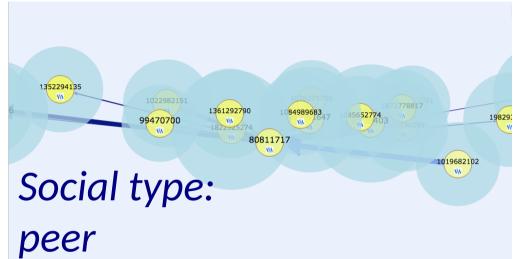
$$K_{it} = \sum_{j,t} (L_{ij} + C_{ij}) / Max_{t=1,T} \sum_{j,t} (L_{ij} + C_{ij})$$

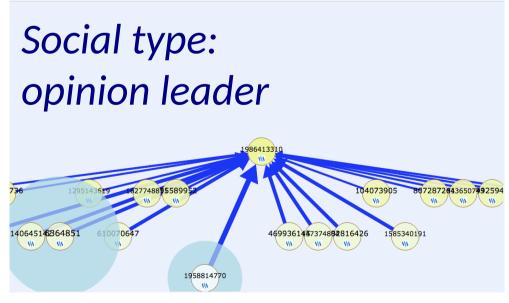


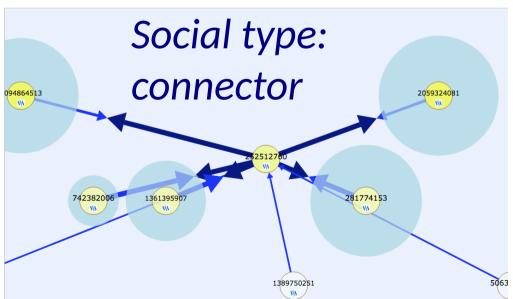
Case 1: Helping users to understand themselves better and perform more efficiently online – using their tracks in social networks and online resources, capture their interests, relationships, communication patterns and social structures.



Social type: follower







Case 2: Helping users to improve their social capital ("karma") over time, monitoring dynamics of its change correlated with online communications, topics and connections changing over time.

Мои друзья за перис	ды			
Период	Карма,%	Одобрения	Комментарии	Друзья
2017-09-19 - 2017-09-20	48	11	1	Madiha Liaqat Khan Joseph Anoop George Елена Трофимова Anatoly Tkachev Lyudmila Kolonina Vanya Vanchez Андрей Толстихин Ерлан Байжанов Aigents Chamara Fernando
2017-09-12 - 2017-09-19	76	12	7	Lyudmila Kolonina Misha Kolonin Елена Трофимова Artyom Art Brynn Gleb Protopopov Игорь Кондратьев Madiha Liaqat Khan Aigents Alexey Turchin Elena Romanenko Anatoly Tkachev Charles Szekeres Ольга Полунина Ерлан Байжанов Mikhail Tumaykin Joseph Anoop George Dmitry Syomin
2017-09-05 - 2017-09-12	100	24	1	Denis Odinokov Mykola Rabchevskiy Misha Kolonin Санников Юрий Gleb Protopopov Arseniy Kolonin Vyacheslav Ananyev Anna Skornyakova Cassio Pennachin Mira Kwak Anatoly Tkachev Anna Brusnitsina Serge Gluschnev Donell Almanzor Aducal Stanislav Taktaev Kirill Ankydinov Andrei Dergatchev Ерлан Байжанов Robert Тегсек Ирина Карлинер Jonathan Kim Andrey Chernogorov Константин Юрченко Наталия Светашева
2017-08-15 - 2017-08-22	52	11	2	Александр Гершаник Елена Трофимова Misha Kolonin Anton Lobastov Evgeniy Pavlovskiy Андрей Толстихин Arseniy Kolonin Aigents Joseph Anoop George Андрей Исаков Евгений Дубровин
2017-08-08 - 2017-08-15	92	15	8	Piaget Modeler Lyudmila Kolonina Yury Nebieridze Joseph Anoop George Misha Kolonin Der
Отчет Aigents для Fa	CEDOOK			
Мои слова за перио <i>г</i>	ĮЫ	Одобрения	Комментарии	Слова
Мои слова за период Период	<u>ы</u> Карма,%		Комментарии 1	
<u>Мои слова за период</u> Период 2017-09-19 - 2017-09-20	<u>ы</u> Карма,%	Одобрения 11 12	Комментарии 1 7	presentations along political recognizing project research demonstrations contribution networks epidemic dynamics temporal concurrency concurrency-inductions.
Мои слова за период Период 2017-09-19 - 2017-09-20 2017-09-12 - 2017-09-19	<mark>Карма,%</mark> 48	11	Комментарии 1 7	presentations along political recognizing project research demonstrations contribution
Мои слова за период Период 2017-09-19 - 2017-09-20 2017-09-12 - 2017-09-19 2017-09-05 - 2017-09-12	Карма,% 48 76	11	Комментарии 1 7 1	presentations along political recognizing project research demonstrations contribution networks epidemic dynamics temporal concurrency concurrency-induction susceptible gleeson ice lett source good high whats neighbors contact infections theoretically dynamic dramatically different results given rev static tomokatsu effects temporal networks sampling biases network department namur institute bristol real-life variety statistics data results mathematics sampled tokyo better strategy increasingly japan scenarios indoes improved number sweden four mode hmns machines networks systems people review current designing types identify social online humans increasingly.
Мои слова за период Период 2017-09-19 - 2017-09-20 2017-09-12 - 2017-09-12 2017-09-05 - 2017-09-12 2017-08-29 - 2017-09-05	Карма,% 48 76 100	11 12 24	1 7 1	presentations along political recognizing project research demonstrations contribution networks epidemic dynamics temporal concurrency concurrency-induction susceptible gleeson ice lett source good high whats neighbors contact infections theoretically dynamic dramatically different results given revistatic tomokatsu effects temporal networks sampling biases network department namur institute bristol real-life variety statistics data results mathematics sampled tokyo better strategy increasingly japan scenarios indoes improved number sweden four mode hmns machines networks systems people review current designing types identify social online humans increasing take markets daily systematically virtual mass interact media network interactions alone computing producing design multiplayer successful previous technology
Мои слова за период Период 2017-09-19 - 2017-09-20 2017-09-12 - 2017-09-12 2017-09-05 - 2017-09-12 2017-08-29 - 2017-09-05	Карма,% 48 76 100 0	11 12 24	1 7 1	presentations along political recognizing project research demonstrations contribution networks epidemic dynamics temporal concurrency concurrency-induction susceptible gleeson ice lett source good high whats neighbors contact infections theoretically dynamic dramatically different results given rev static tomokatsu effects temporal networks sampling biases network department namur institute bristol real-life variety statistics data results mathematics sampled tokyo better strategy increasingly japan scenarios indices improved number sweden four model hmns machines networks systems people review current designing types identify social online humans increas resource crowdsensing take markets daily systematically virtual mass interact media network interactions alone computing producing design multiplayer successful previous technology personal analytics anyone social category image video row st learn th online data vi
Мои слова за период Период 2017-09-19 - 2017-09-20 2017-09-12 - 2017-09-19 2017-09-05 - 2017-09-12 2017-08-29 - 2017-09-05 2017-08-15 - 2017-08-22 2017-08-08 - 2017-08-15	Карма,% 48 76 100 60 52	11 12 24 0	1 7 1 0	presentations along political recognizing project research demonstrations contribution networks epidemic dynamics temporal concurrency concurrency-induct susceptible gleeson ice lett source good high whats neighbors contact infections theoretically dynamic dramatically different results given rev static tomokatsu effects temporal networks sampling biases network department namur institute bristol real-life variety statistics data results mathematics sampled tokyo better strategy increasingly japan scenarios indoes improved number sweden four model hmns machines networks systems people review current designing types identify social online humans increas resource crowdsensing take markets daily systematically virtual mass interact media network interactions alone computing producing design multiplayer successful previous technology personal analytics anyone social category image video row st learn th online data visional bica conference cognitive capital layers society relationships aligned proceedings being feature karma agent
Мои слова за период Период 2017-09-19 - 2017-09-20 2017-09-12 - 2017-09-12 2017-09-05 - 2017-09-12 2017-08-29 - 2017-09-05 2017-08-15 - 2017-08-22 2017-08-08 - 2017-08-15	Карма,% 48 76 100 0 52 92	11 12 24 0 11 15	1 7 1 0 2 8 9 9	presentations along political recognizing project research demonstrations contribution networks epidemic dynamics temporal concurrency concurrency-induct susceptible gleeson ice lett source good high whats neighbors contact infections theoretically dynamic dramatically different results given rev static tomokatsu effects temporal networks sampling biases network department namur institute bristol real-life variety statistics data results mathematics sampled tokyo better strategy increasingly japan scenarios indoes improved number sweden four model hmns machines networks systems people review current designing types identify social online humans increas resource crowdsensing take markets daily systematically virtual mass interact media network interactions alone computing producing design multiplayer successful previous technology personal analytics anyone social category image video row st learn th online data visional bica conference cognitive capital layers society relationships aligned proceedings being feature karma agence which interactions interest media interactions intended now personal human reporting serves stories multiple yet scenetic control room setficial neither approached coming setting at un

Case 3: Encouraging users to conduct positive and effective communications with partners while guarding users from being manipulated themselves or being offensive to others.



I connect my "virtual agent" to my social networks and communication channels and let it learn about my partners and preferences.



positive or manipulative and offensive.

Ok, let me know - where

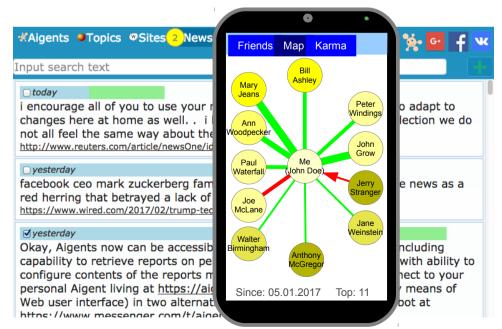
My text messages

My Web navigation
My Web search

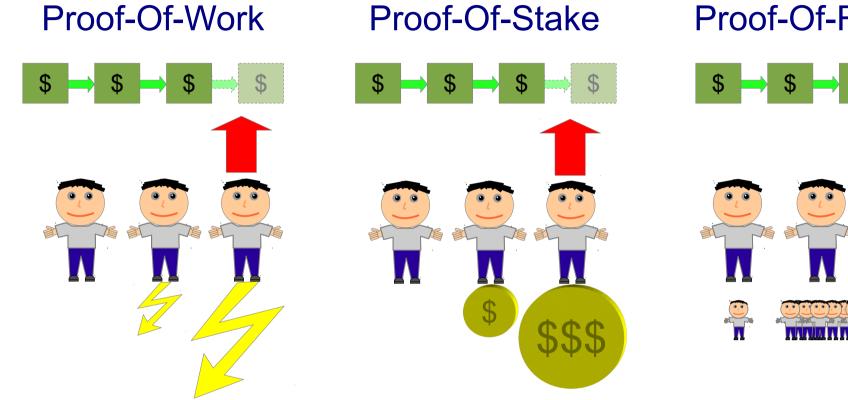
My email

can I get that information?

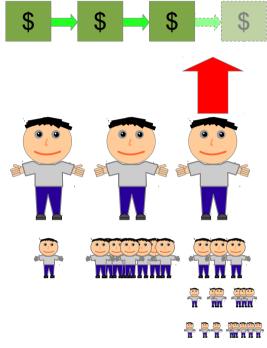
XAigents



Case 4: Providing "proof-of-reputation" consensus for governance in blockchain based systems, resistant to takeover and scam attacks.



Proof-Of-Reputation



$$R_{i} = \sum_{t} \sum_{j} (R_{j} * V_{ijt})$$

Those who own more computing power govern the network.

Those who have more money govern the network.

Those who earn deeper reputation and greater long-term audience base govern the network.

7 points of view from 3 perspectives

Product

Technology

Market

Highly Personalized News Aggregator

Adaptive Intelligence Engine

Social Evidence-based Cognitive Model

Semantic Chat Bot

Personal and Corporate Assistant

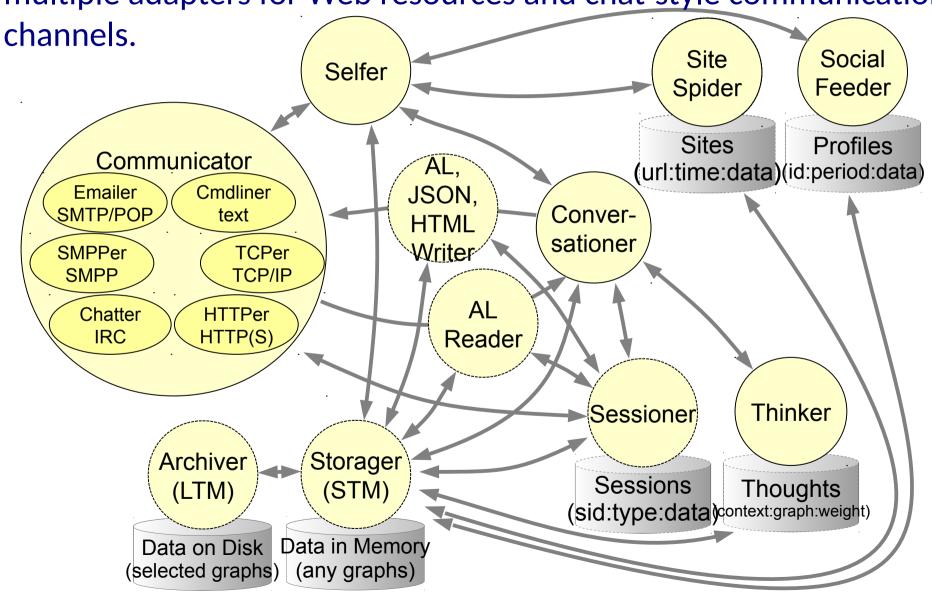
Personal Social Analytics

Friends

Intelligent
Multi-agent
Marketplace

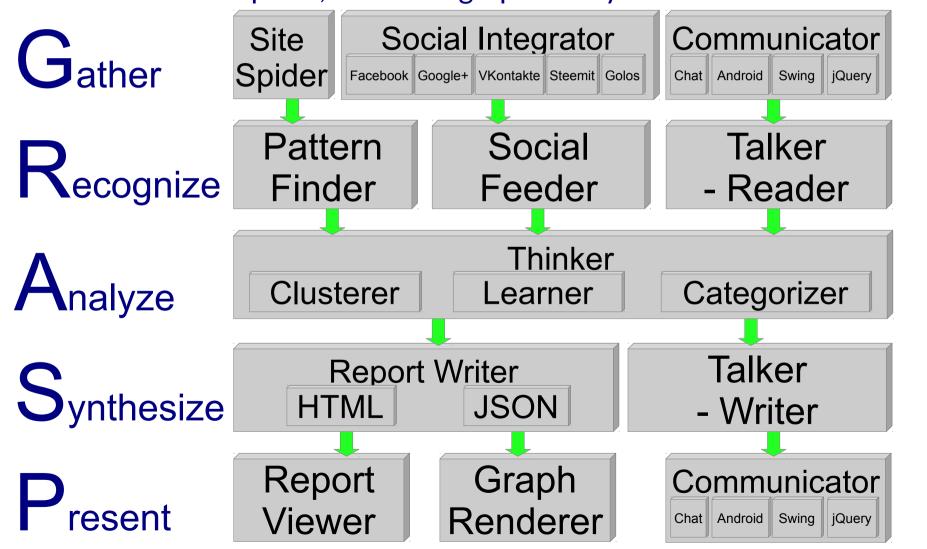
Overall Architecture

Autonomous long-term storage with in-memory short-term storage, multiple adapters for Web resources and chat-style communication



Cognitive Architecture

Pipeline of 5 processing layers for gathering, recognizing, analyzing, synthesizing and presenting (performing). Fed with online HTML data or dynamic chat sessions. Emits HTML reports, semantic graphs or dynamic conversations.

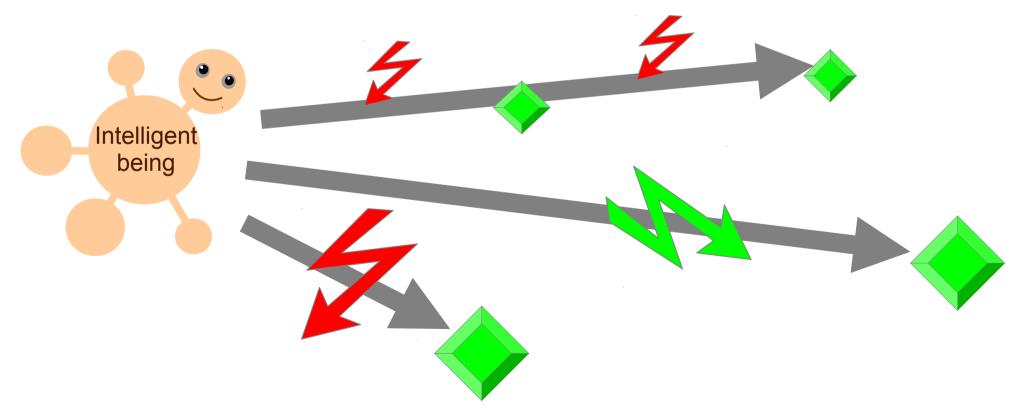


Adaptive Intelligence Engine

Definition of General Intelligence:

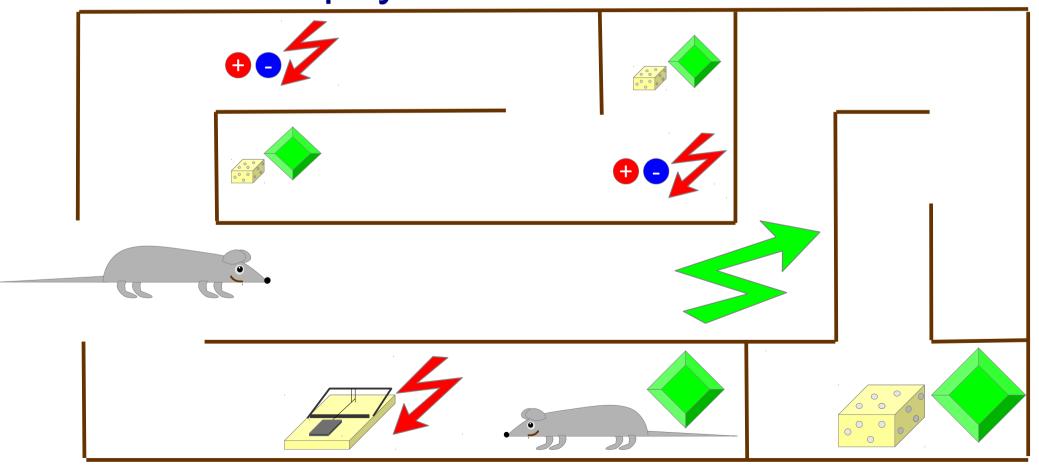
Capability to reach complex goals in complex environments using limited resources

(Ben Goertzel)

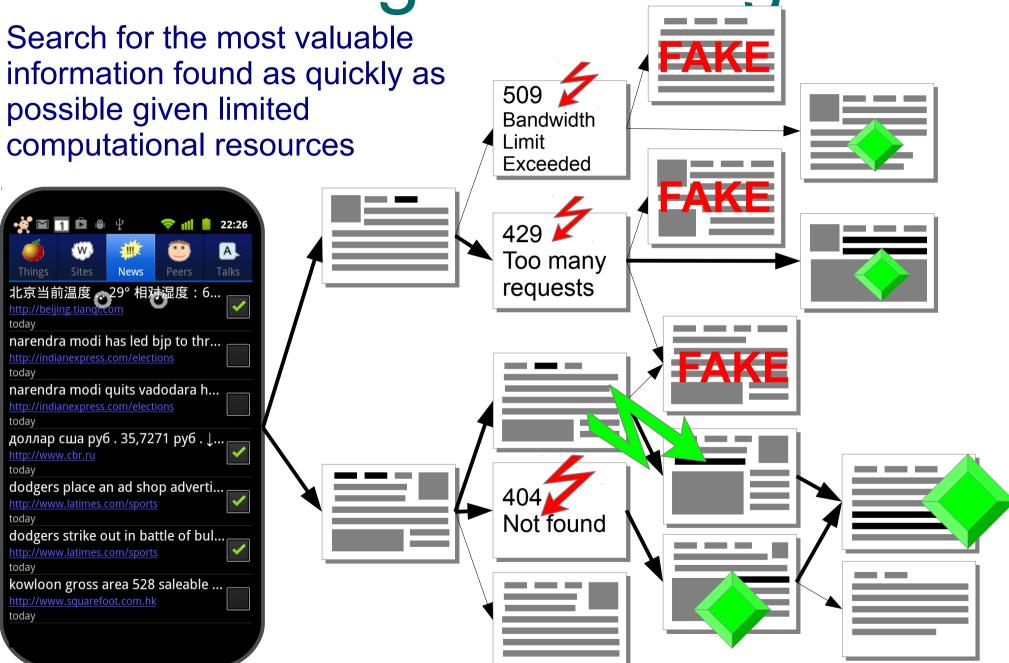


Biological Intelligence

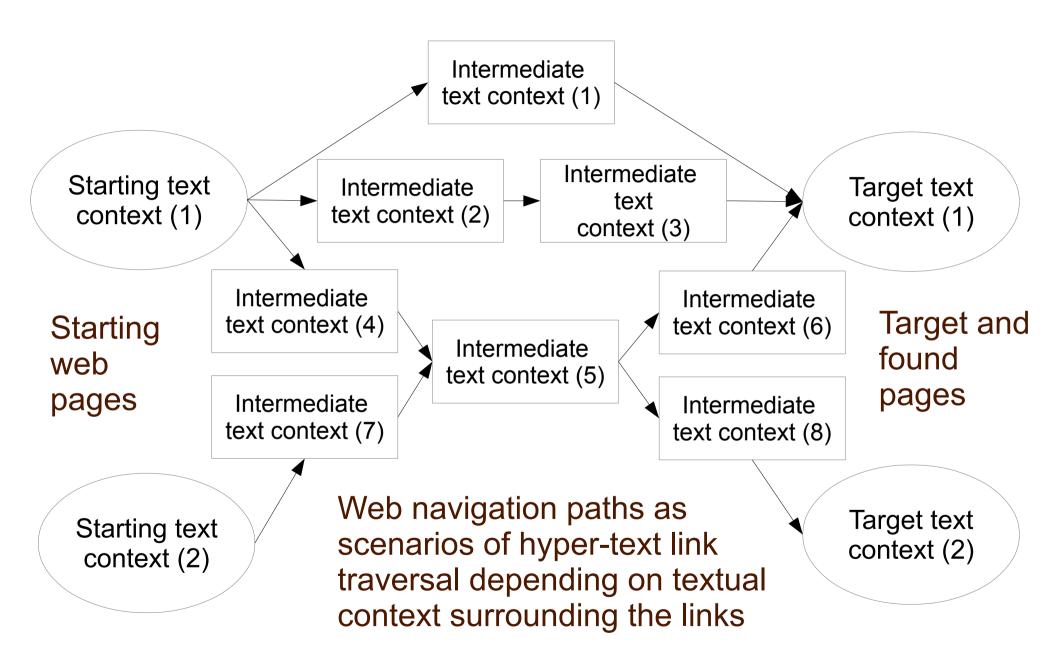
Search for nutrition and reproduction opportunities given multiple physical threats and limited physical resources



Internet Agent Intelligence



Aigents approach: link traversal scenarios detection and replay



Targeted search: one problem – two algorithms

Path Tracker

(scenario player)

Input:

- Starting point (initial context)
- Goal (terminal context)
- "Path set" (set of paths over series of contexts possibly leading to the goal from starting point)

Output:

 Found goal context in success or failure indicator to pass control to Path Finder

Goal + Staring Point + Path set => Goal | Failure

Path Finder

(scenario detector)

Input:

- Starting point (initial context)
- Goal (terminal context)

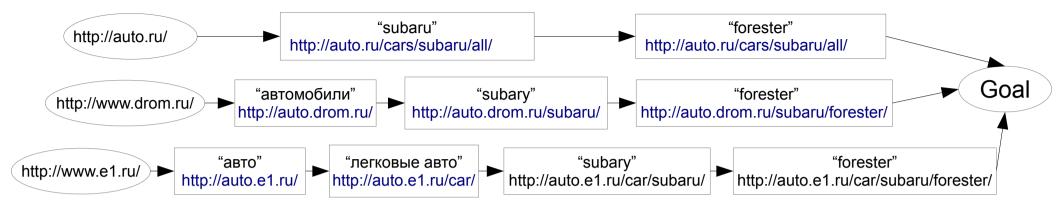
Output:

- "Path set" (set of paths over series of contexts leading to the goal from starting point)
- Found goal context

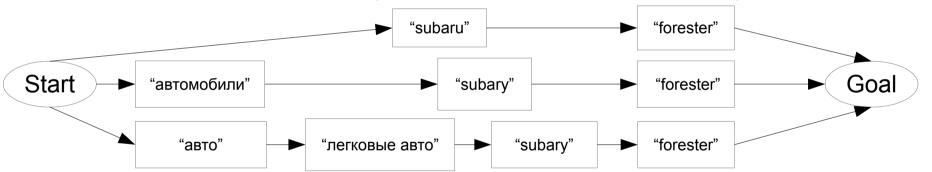
Goal + Staring Point => Path set + Goal

Search for offers of used cars on web sites in Russia

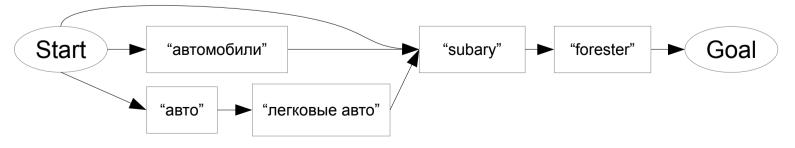
Web traversal paths along links while searching for Subaru "Forester" automobiles



Scenarios of textual context changes for link traversals searching for Subaru "Forester"



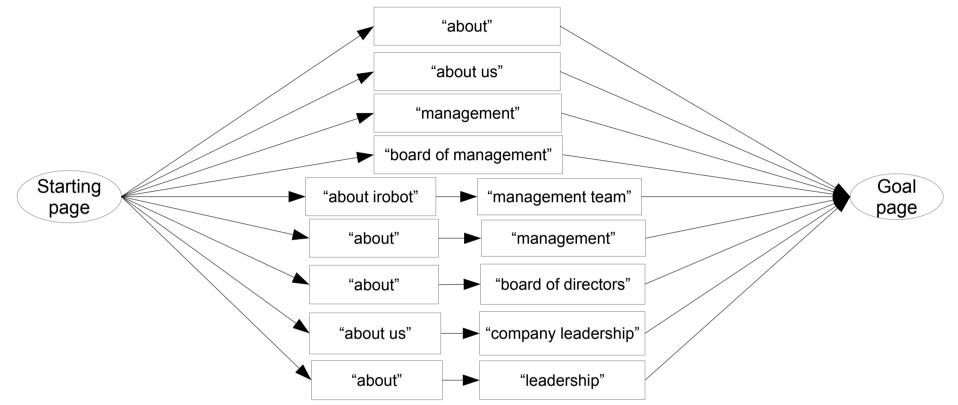
Generalized (reduced) scenario of textual context changes for link traversals



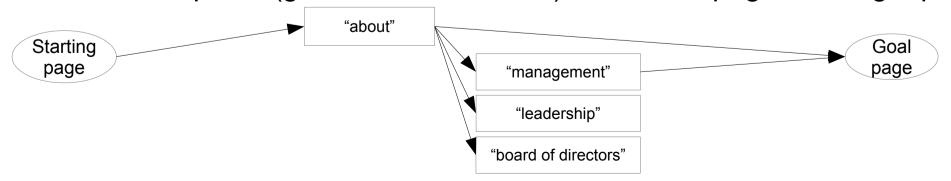
Company management contacts search on web sites

(using top companies in "robotics" area for example)

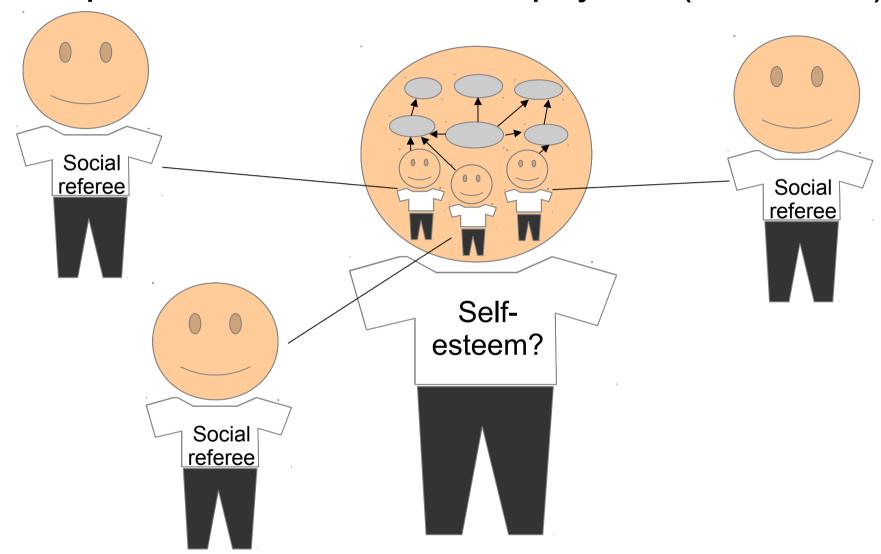
Exhaustive set of paths (traversal scenarios) from "start page" to "target page":



Reduced set of paths (generalized scenario) from "start page" to "target page":

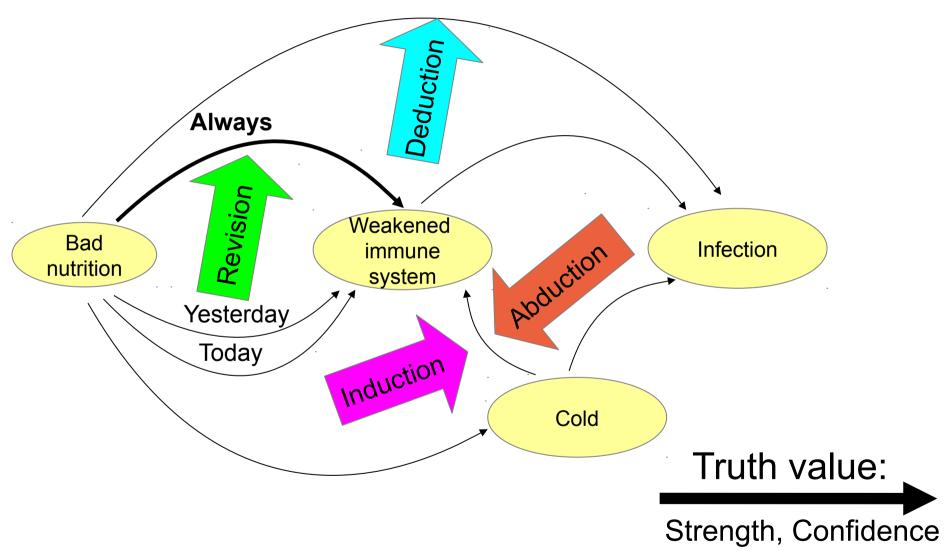


Compassion-based artificial psyche (Webmind)

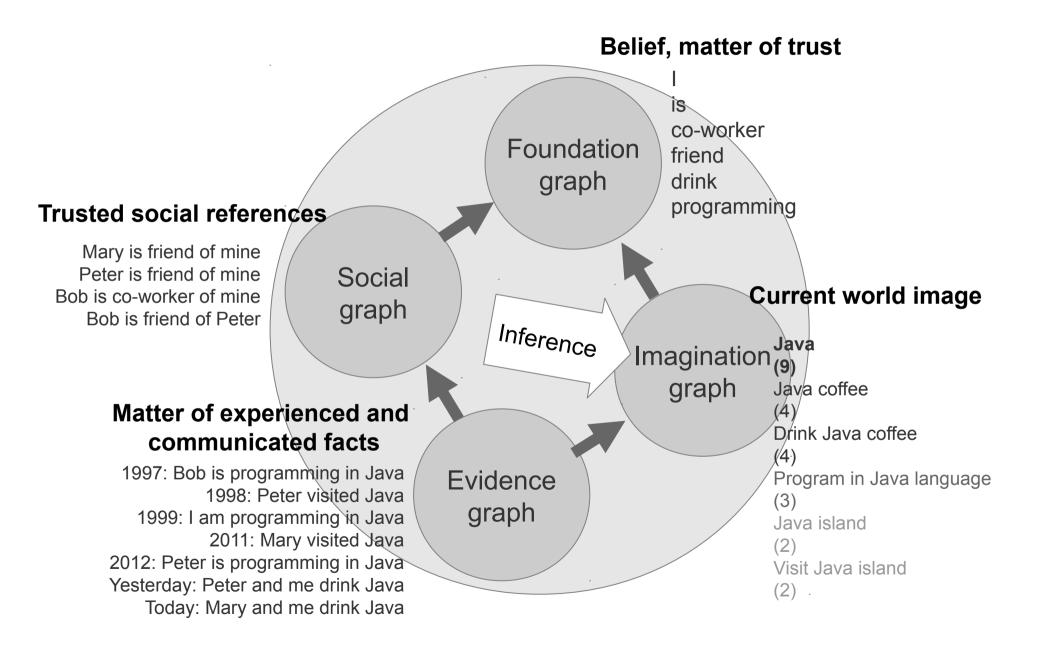


B.Goertzel, A.Kolonin, J.Pressing, C.Pennachin (2000)

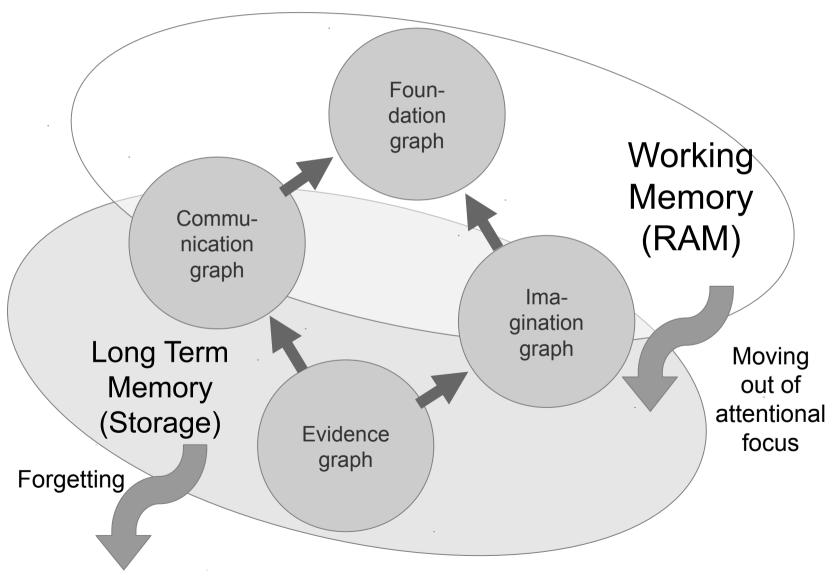
Non-Axiomatic Reasoning (NARS) Inference



P.Wang (1993)

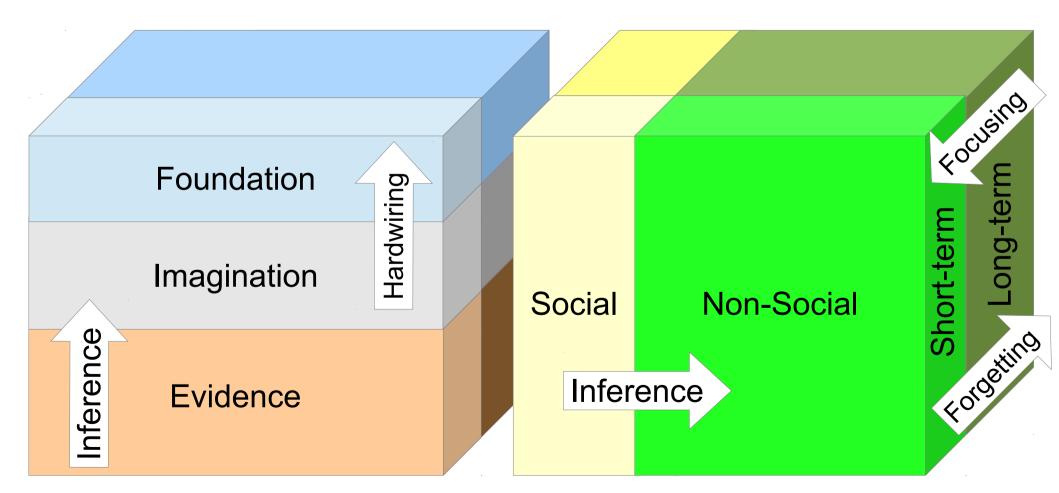


Applying resource constraints



Cognitive Architecture Approach

Social evidence-based resource-constrained approach with temporally and socially scoped evidence, supported with short-term and long-term memory capabilities.

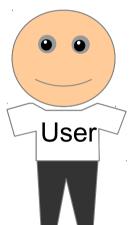


Semantic Chat Bot - Multiple Channels

Chat/Bot

My Aigents 1.1.0 Copyright © 2015 Anton Kolonin, Aigents Group. SAY:What my keeping days, sensitivity threshold, update time, chec GET: Your check cycle day, keeping days 10, sensitivity threshold 8 0, update time 9:00. SAY: No there is storm, times today GET:Ok SAY:My knows no storm. SAY:What my knows? GET: Your knows temperature. SAY: My knows no temperature. SAY: What my knows? GET: Your not. SAY: No name temperature, name storm

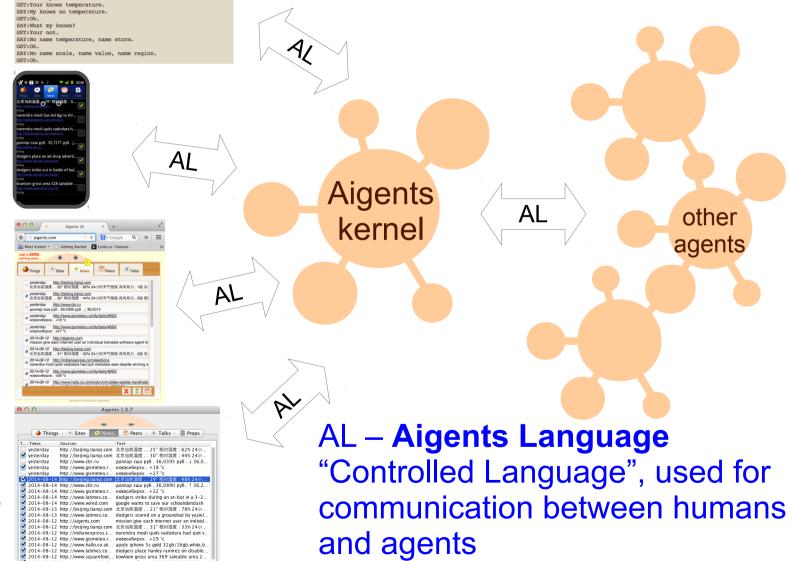
GET:What your pet name?



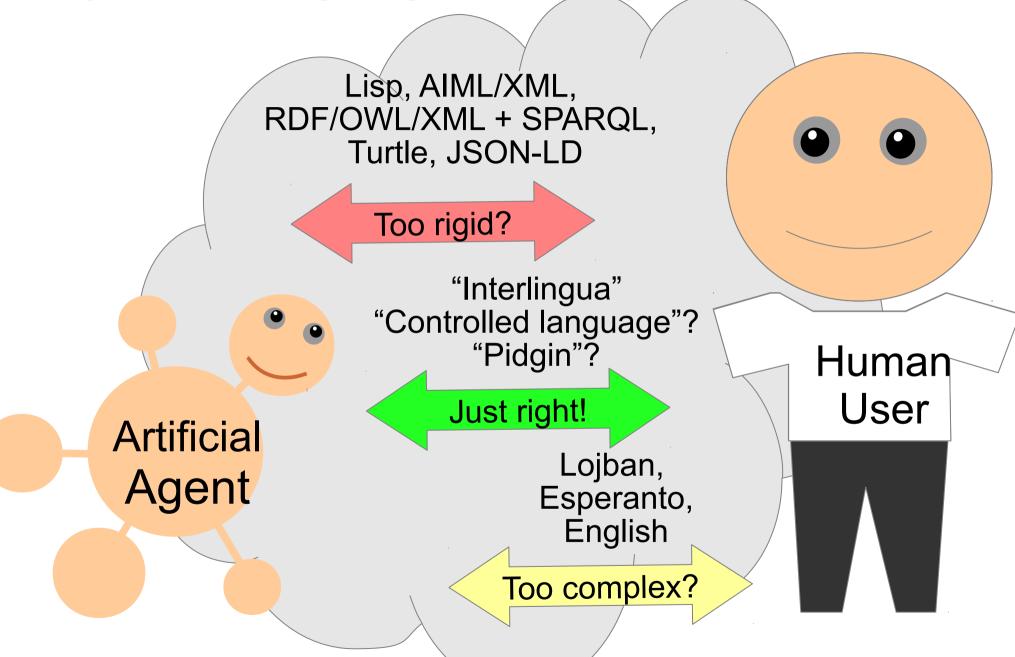
Mobile UI

Server Web UI

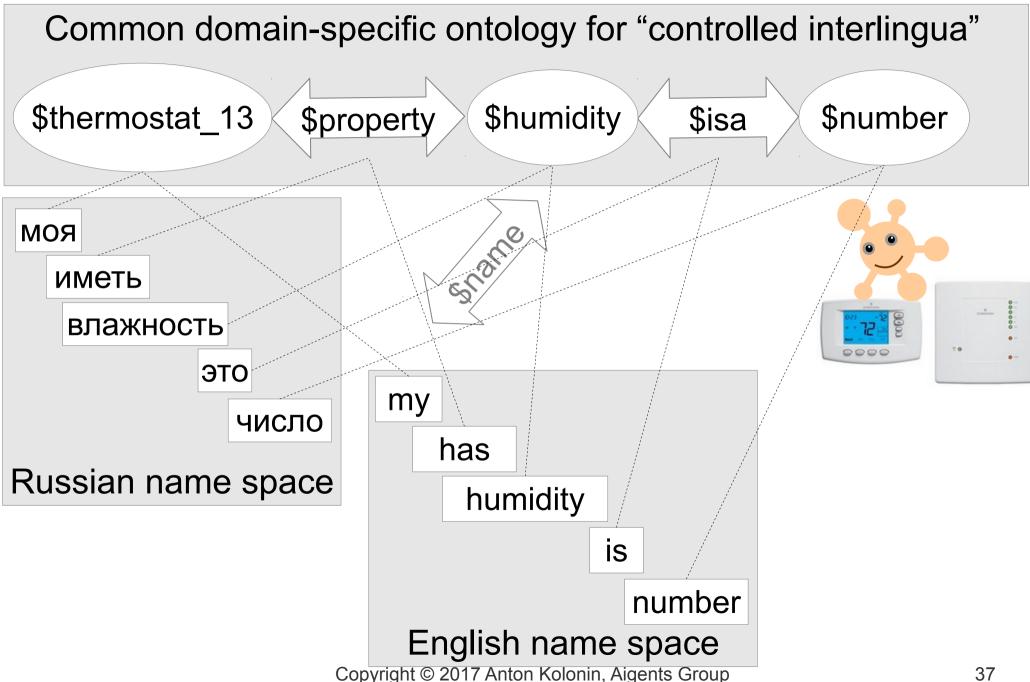
Desktop UI (Windows, Mac, Linux)



Aigents Language - Filling Linguistic Gap



Aigents Language – as labeled ontology



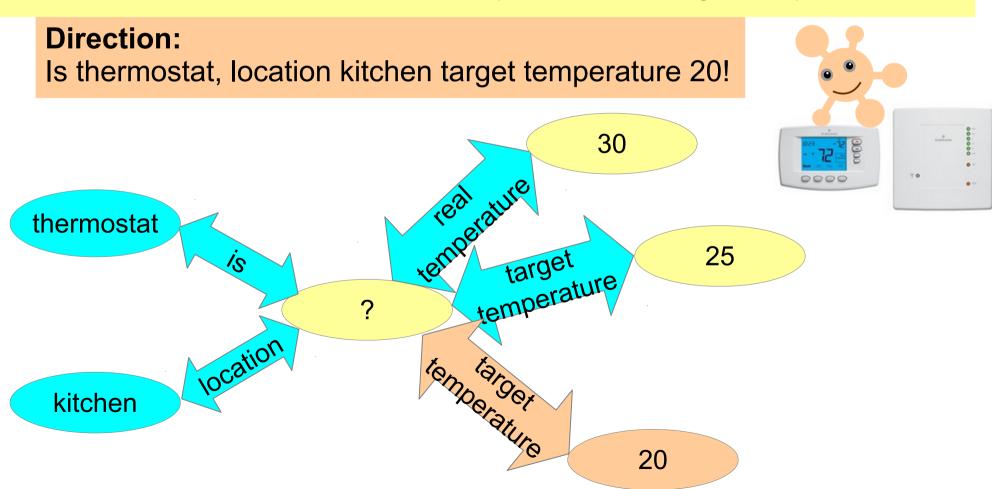
Aigents Language - for graph manipulation

Interrogation:

What is thermostat, location kitchen real temperature, target temperature?

Declaration:

Is thermostat, location kitchen real temperature 30, target temperature 25.



Semantic Chat Bot - History and Family Trainable chat bots

IBM Watson
Microsoft Tay
Aigents

Conversagent

api.ai Eugene Goostman

Siri

Programmable chat bots

1967

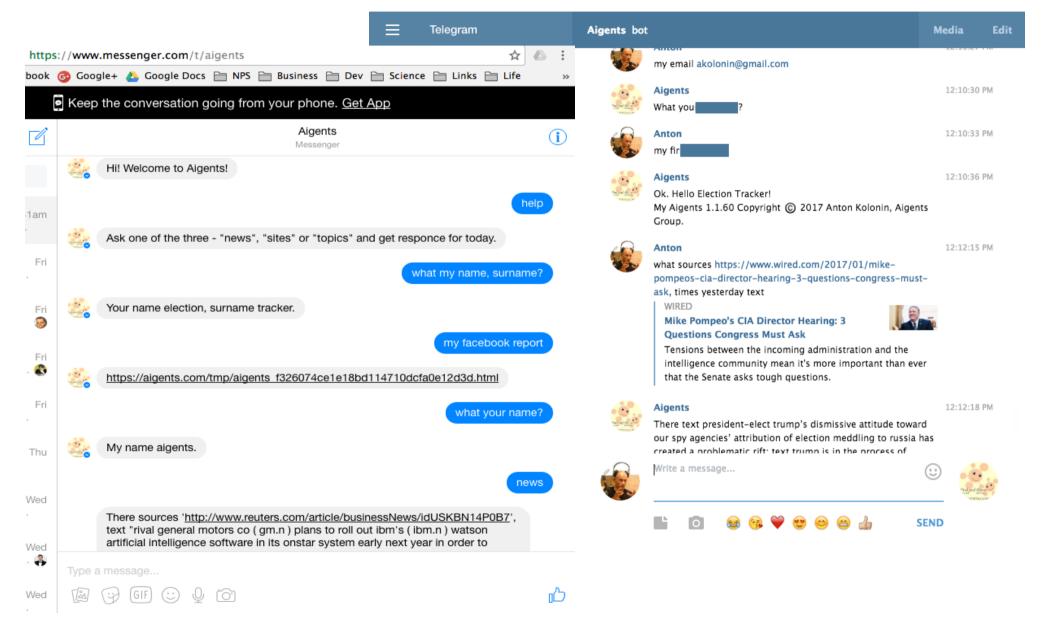
ELISA

1997

2007

2017

News Monitoring and Personal social analytics: bots at Telegram (@AigentsBot) and Facebook Messenger (Aigents)



7 points of view from 3 perspectives

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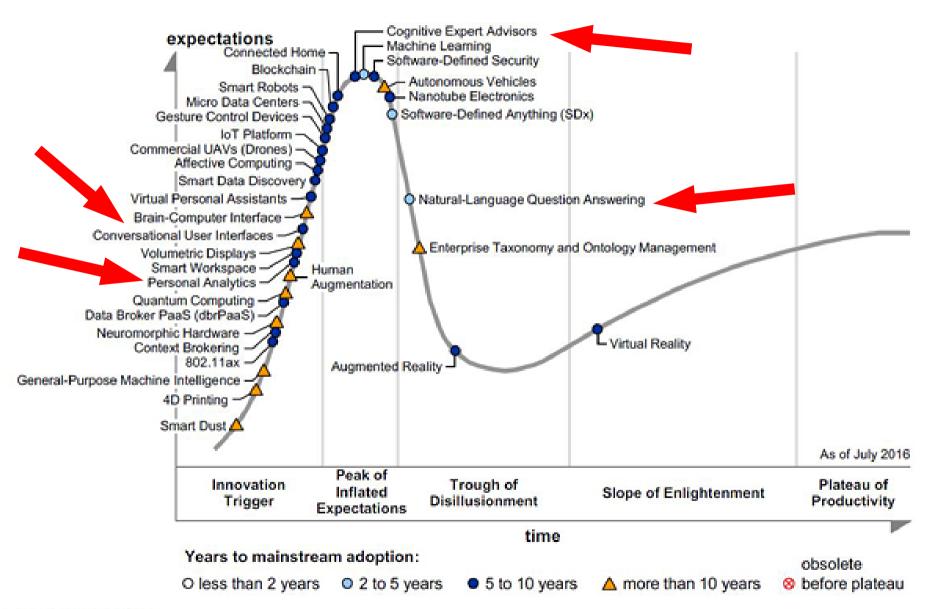
Personal and Corporate Assistant

Personal Social Analytics

Friends

Intelligent Multi-agent Marketplace

Where the Market Goes



Source: Gartner (July 2016)

"Нуре

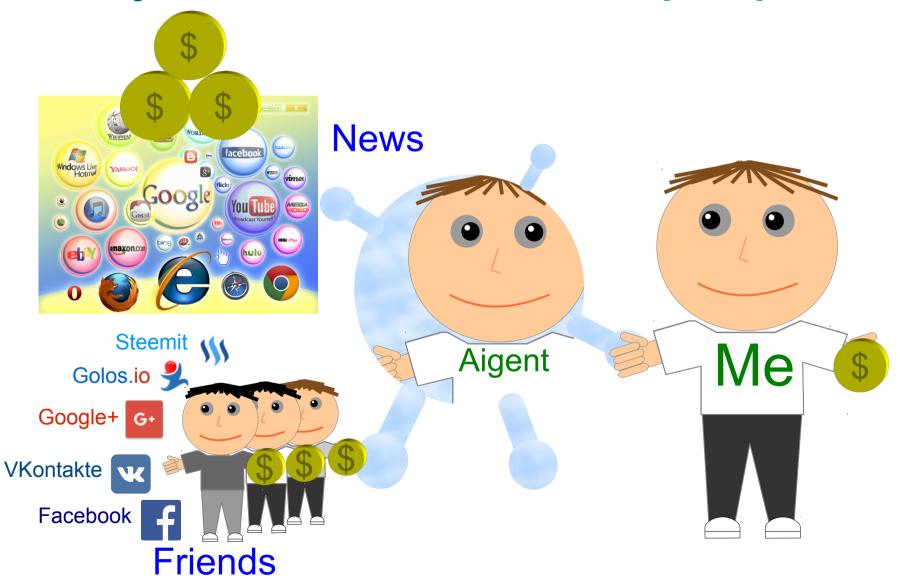
Who is paying? The User?



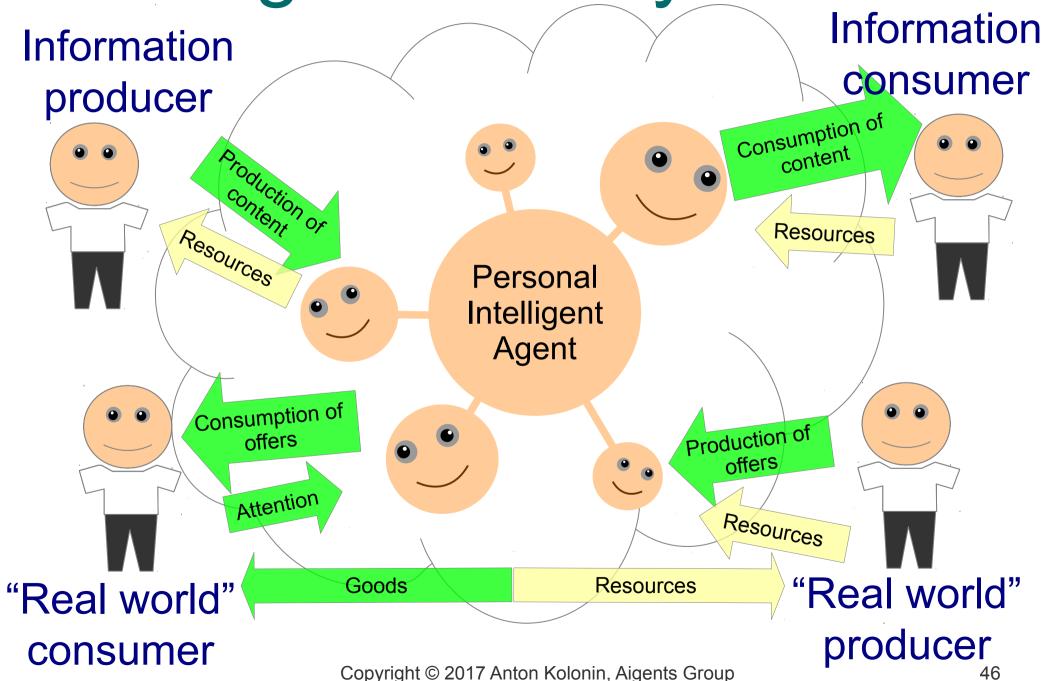
Who is paying? The Business?



Who is paying? Everyone, a bit and for purpose!



Aigents Ecosystem



Thank you! Try demo:

https://www.youtube.com/watch?v=xmGxt1e4JnA&t=264



Stay in touch:

E-mail: akolonin@aigents.com

Site: https://aigents.com

Facebook: https://www.facebook.com/aigents

Youtube: https://www.youtube.com/aigents

Google+: https://plus.google.com/+Aigents

Medium: https://medium.com/@aigents

Steemit: https://steemit.com/@aigents

Golos.io: https://golos.io/@aigents

VKontakte: https://vk.com/aigents

Facebook Messenger: Aigents

Telegram Messenger: @AigentsBot