

A group of people are gathered around a table in a meeting. One person is pointing at a laptop screen which displays a Slack interface. Another person is writing on a notepad. The scene is dimly lit, with the primary light source coming from the laptop screen. The overall atmosphere is collaborative and focused.

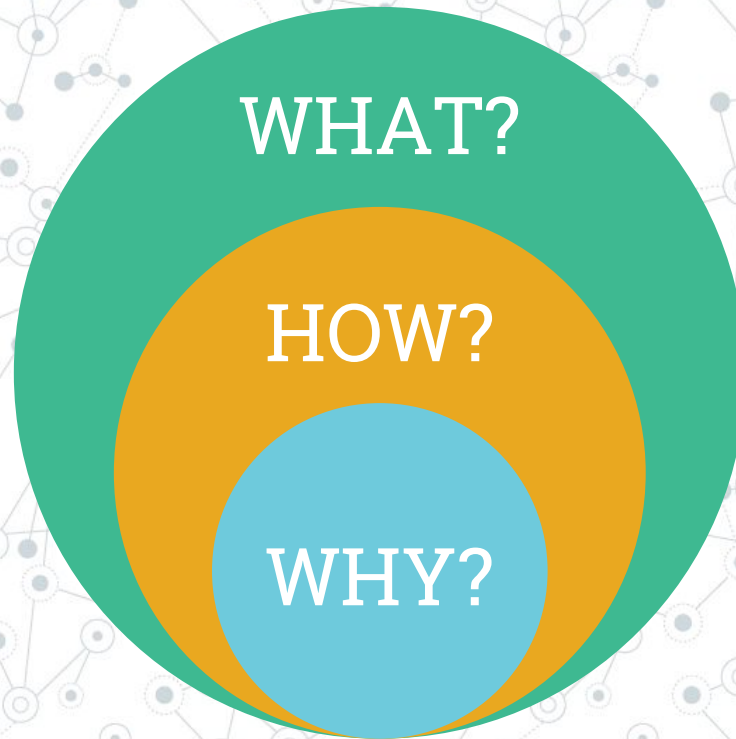
Slack summarizer

Visually summarize conversations



slack.

Outline





9 000 000

weekly users





100 000 000

hours spent monthly



Why?

- Massive slack conversation, impossible to catch up
- Time wasting
- Reduce company's efficiency



Math Fun Time!

Review



- 1 employee: 15 minutes/day
- 100 employees: 25 hours/day
- 9.000.00 employees: 2.5 centuries/day

How

MIT
Technology
Review

Slack CEO: How We'll Use **AI** to Reduce Information Overload



Stewart Butterfield



Fact

Human brains process
visuals 600000 times
faster than text!



Solution

- **Visualize** the conversations
 - ➔ No need to scroll that far up anymore
 - ➔ Increase productivity

How it works

**Extract
message's
features**



Step 1

**Cluster
similar
messages**



Step 2

**Visualize
messages
in 3D**



Step 3

Sentences Clustering

A decorative network graph in the top right corner, consisting of numerous small circles (nodes) connected by thin lines (edges). Some nodes are highlighted with a double-circle outline.

Time

Conversation's
timeline

Participant

Who involved in the
conversation

**Sentences
embedding**

General meaning of
sentences

A decorative network graph in the bottom left corner, consisting of numerous small circles (nodes) connected by thin lines (edges). Some nodes are highlighted with a double-circle outline.

Sentences Clustering

Time matrix

How close each sentences are to each others

W1

	S1	S2	S3	...
Time	15:20	15:28:37	15:29:30	...

	S1	S2	S3	...
S1	0	0.87	0.98	...
S2	0.87	0	0.92	...
S3	0.98	0.92	0	...
...

Sentences Clustering

Participant matrix

Who is involved in each message

	U1	U2	U3	...
S1	0	1	0	...
S2	0	1	1	...
...

	S1	S2	S3	...
S1	0	1	3	...
S2	1	0	2	...
S3	1	0	0	...
...

W2

Sentences Clustering

Sentence embedding

Semantic meaning of sentences

W3

	D1	D2	D3	...
S1	0.126	0.4869	0.2859	...
S2	0.874	1.363	0.92	...
...

	S1	S2	S3	...
S1	0	0.87	0.43	...
S2	0.87	0	0.92	...
S3	0.43	0.65	0	...
...

Sentences Clustering

Combine all 3 features to cluster sentences

W1

	S1	S2	S3	...
S1	0	0.8	0.9	...
S2	0.7	0	0.2	...
S3	0.9	0.2	0	...
...

W2

	S1	S2	S3	...
S1	1	0	0	...
S2	0	1	1	...
S3	1	1	1	...
...

W3

	S1	S2	S3	...
S1	0	0.8	0.1	...
S2	0.7	0	0.9	...
S3	0.4	0.6	0	...
...

	S1	S2	S3	...
S1	0	0.87	0.98	...
S2	0.87	0	0.92	...
S3	0.98	0.92	0	...
...

$$W = \lambda_1 * W1 + \lambda_2 * W2 + \lambda_3 * W3$$



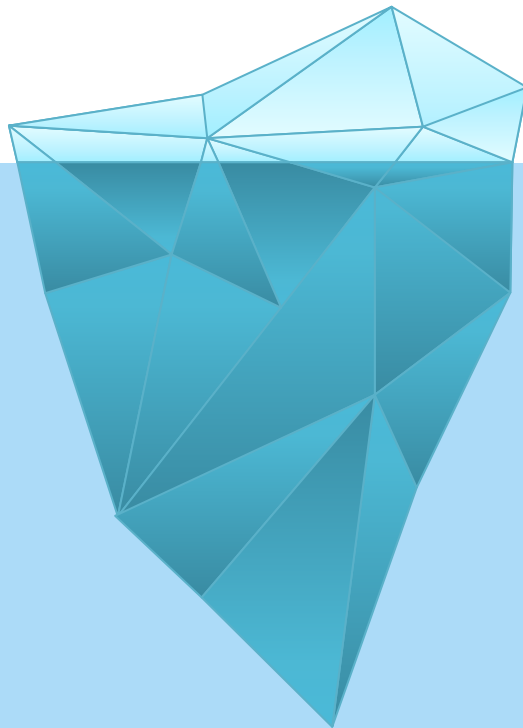
**Find
structures
in data**

**Graph-based
Clustering
Algorithm**

Visualize summary

Important messages
are floated to
the surface.

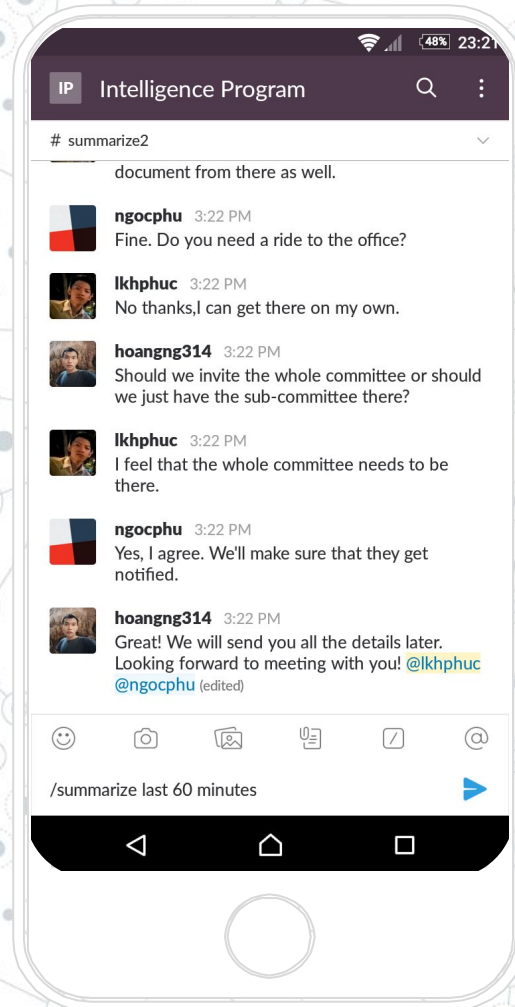
Less important ones
are sunk under
the surface.

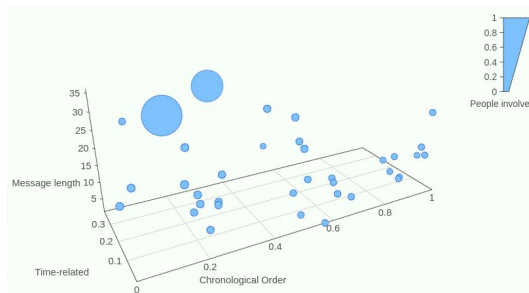


The entire structure
of the conversations is
displayed.

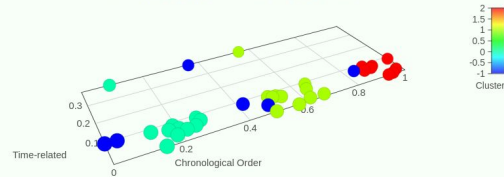
User interface

Simple, easy to use





Bubbles' size represent amount of information.



Each color represents a discussed idea.

SLACK SUMMARIZER

Id	User	Message
0	hoangng314	Here's a case study for Intelligence Program 3 (if we still focus on students as main manpower)
1	hoangng314	//www.kainos.com/careers/student-and-graduates/aicamp. Shorten the 6-month program to 2-week camp, same investment 7,000 - 8,000\$, enough time and evidence to identify talents
2	lkphuc	Kainos AI Camp - machine learning Kainos: This year we are launching AI Camp, a brand new summer camp for students to learn the foundations of artificial intelligence!
3	lkphuc	<@hoangng314> My imagination for IP3 is to bring it under AI Labs inside university. Much lower investment effort with the same (or even higher) reach. Then create another event (maybe your idea above) to inspire & engage!
4	hoangng314	How can students from different uni can join Lab under 1 uni? Or we just to invest in the top 5 uni labs?
5	lkphuc	True, investing in several labs might be needed. For beginning, top 2 or 3 already too good if we can go deeply into the student network with great branding!
6	lkphuc	more importantly, its easier to engage junior/senior researcher within the university (senior means professor, junior means Master/PhD students)
7	hoangng314	<http://www.thedataincubator.com/> another case study The Data Incubator Applied Data Science Education'
8	hoangng314	I prefer this one. They collaborate with giants to provide fellowship, training and hiring!
9	lkphuc	Cool! Could you summarize their model? <@hoangng314>
10	lkphuc	and how do you think it would be customised and suited to us?
11	lkphuc	these ideas are important for the next national HR planning this weekend!
12	hoangng314	Anyway, For summary
13	lkphuc	<@hoangng314> Hiring strategy from now on will be categorized into 'Recruit - Innovate - Promote - Convert'. Relate instruction in the assistance to

Visual summary

Quickly grasp the important messages and entire conversation

Thanks! 
Any question?