

The terminal window shows a script for collecting tweets, with an error message about reading a property 'long' from null. The spreadsheet contains a table with columns like Title, Nature, Link, Author, Year, mother, Content, Objective, Topic, Feature, Subject, Target, Language, Examples, Group, Venue, Motivation, and Technological Location. The web browser window for [data.gv.at](http://data.gv.at) displays a search interface, a theme selector, and a mobile application preview showing a data visualization for dog counts in Vienna.

# Talk Data to Me

Svitlana Vakulenko

# Data Pain

## **Big Data => Big Problems**



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## Big Data => Big Problems

Discovery challenge

Screenshot of a spreadsheet (tolearnmeNew.ods) showing a list of items with columns for Title, Nature, Link, Author, Year, mother, Content, Objective, Topic, Feature, Subject, Target, Language, Excerpts, Group, Venue, Motivation, and Technology, Location.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	Title	Nature	Link	Author	Year	mother	Content	Objective	Topic	Feature	Subject	Target	Language	Excerpts	Group	Venue	Motivation	Technology	Location		
2	исследователь	наука																			
3	Полицейский	уроки	Павел																		
4	Онлайн-тест словникового запаса учащихся	тест	https://www.analime.com/uk/test																		
5	Мозг – не карта	статья	Юрий Земенюк, Ірина Зубрицька	запомінання української мови та відповідь на запит, посвідчений																	
6	Академія	Документ	https://www.analime.com/uk/test																		
7	Кафедральна хата в підвалі	статья	https://www.donga.ua/News/Report/Details.aspx?ReportID=1858																		
8	Job Index для ОСІА	статья	DW																		
9	Університетське вивчення в ОІА	статья	http://www.microsoftacademy.com/041Учитель оператора_07/Максим																		
10	СІД для викладачів	статья																			
11	Алгоритм построения и анализа	статья	Thomas Corr 2001 2009 1992																		
12	Vogue	Журнал																			
13	Forbes	Журнал																			
14	Ек.	Журнал																			
15	Береговий	Журнал																			
16	Апарт	Журнал																			
17	Бюлленте	Журнал																			
18	data.gov.at	документ	http://data.gov.at																		
19	All-Wenner	документ	Wenner																		
20	Weltip	документ	http://www.weltip.com																		
21	Help Me In	документ	http://www.weltip.com																		
22	WG-Daten	документ	http://www.weltip.com																		
23	EasyWIG	документ	http://www.weltip.com																		
24	metainfo	документ	http://www.weltip.com																		
25	Eat Your Way	документ	http://www.weltip.com																		
26	PGIG	документ	http://www.weltip.com																		
27	Reid	документ	http://www.weltip.com																		
28	visual	документ	http://www.weltip.com																		
29	DesignCafe	документ	http://www.weltip.com																		
30	www	документ	http://www.weltip.com																		
31	visual	документ	http://www.weltip.com																		
32	GOVLAB	документ	http://www.weltip.com																		
33	TopicCrawler	документ	http://www.weltip.com																		
34	Psych	документ	http://www.weltip.com																		
35	NLP News	документ	http://www.weltip.com																		
36	tourspiral	документ	http://www.weltip.com																		
37	deossal	документ	http://www.weltip.com																		
38	deossal	документ	http://www.weltip.com																		
39	deossal	документ	http://www.weltip.com																		
40	deossal	документ	http://www.weltip.com																		
41	deossal	документ	http://www.weltip.com																		
42	Programs	документ	http://www.weltip.com																		
43	Angular	документ	http://www.weltip.com																		

Screenshot of the data.gv.at website showing a search interface and a list of recent applications and news.

**Themen durchsuchen**

- Arbeit
- Wirtschaft
- Bildung
- Finanzen & Rechnungswesen
- Geographie & Planung
- Gesellschaft & Soziales
- Gesundheit
- Kunst & Kultur
- Land- & Forstwirtschaft
- Sport & Freizeit
- Umwelt
- Verkehr & Technik
- Verwaltung & Politik
- Wirtschaft & Tourismus

**Neueste Anwendungen**

- 18. Apr 17 GovCrawler
- 18. Apr 17 Flux
- 06. Apr 17 Solarpotenzials Tirol
- 28. Mrz 17 Tourism Austria in Tableau
- 09. Mrz 17 mcoovel

**News**

- 06. Mrz 17 Open Data sichtbar und greifbar machen
- 21. Feb 17 Wartungsfenster am 22.2.2017
- 17. Feb 17 Maßnahmen für den Aufbau einer Open Data-Kultur
- 15. Feb 17 Open Data – Wertschöpfung im digitalen Zeitalter
- 26. Jan 17 Gewinnerin des Danubelack2.0 in Bratislava kommt aus Österreich

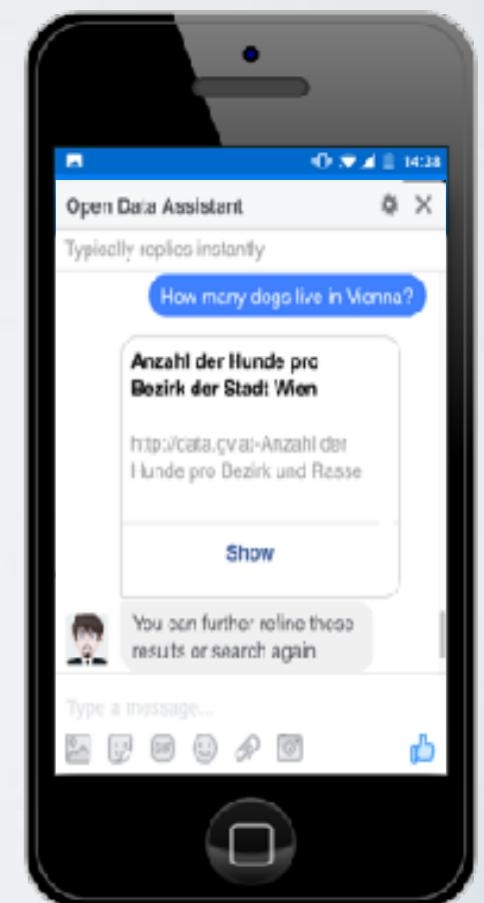
**COOPERATION OGD : ÖSTERREICH**

	Impressum (Datenschutz)	RSS-Feeds	@datagvat	Mehr OpenData
40401: Landesregierung Niederösterreich	10	10	10	10
40402: Heiligenkreuz	20	20	20	20
40403: Kärnten	30	30	30	30
40404: HelmutKlimbisch	50	50	50	50
40405: Hochburg-Ach	50	50	50	50
40406: Höhnhart	50	50	50	50
40407: Jägerndorf	20	20	20	20
40408: Kirchberg bei Mürzzuschlag	40	40	40	40
40409: Lengau	50	50	50	50
40410: Leoben am See	100	100	100	100
40411: Melk	100	100	100	100
40412: Mitterndorf	400	400	400	400
40413: Mureck	200	200	200	200
40414: Mining	50	50	50	50

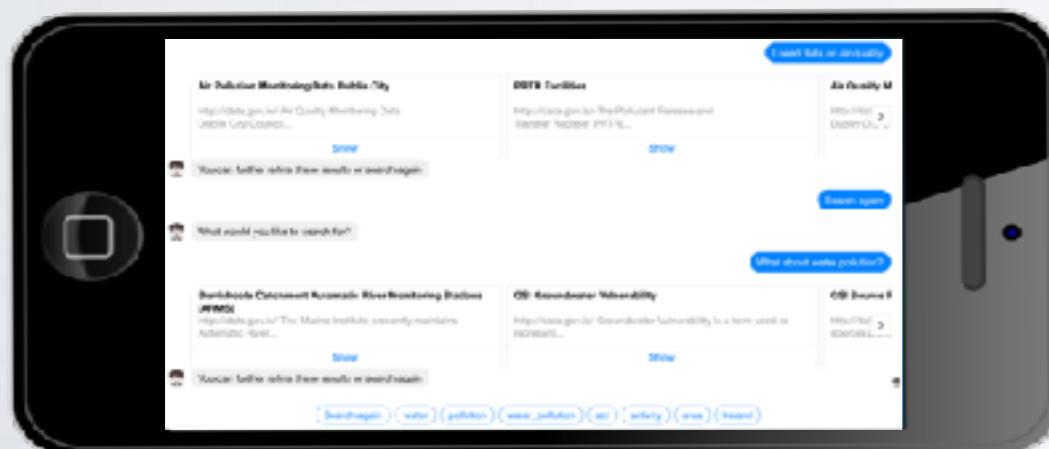
# Our Solution

# **Open Data Assistant**

# Chatbot - dialogue interface (Neumaier et al., 2017)



# Demo I



# Our Solution **QA on Tables**

## End-To-End Memory Networks (Sukhbaatar et al., 2015)

1 Row1 NUTS2 AT31  
2 Row1 LAU2\_CODE 40404  
3 Row1 LAU2\_NAME Braunau\_am\_Inn  
4 Row1 YEAR 2015  
5 Row1 INTERNAL\_MIG\_IMMIGRATION 808  
6 Row1 INTERNATIONAL\_MIG\_IMMIGRATION 357  
7 Row1 IMMIGRATION\_TOTAL 1165  
8 Row1 INTERNAL\_MIG\_EMIGRATION 607  
9 Row1 INTERNATIONAL\_MIG\_EMIGRATION 186  
10 Row1 EMIGRATION\_TOTAL 793  
11 Row2 NUTS2 AT31  
12 Row2 LAU2\_CODE 40405  
13 Row2 LAU2\_NAME Burgkirchen  
14 Row2 YEAR 2015  
15 Row2 INTERNAL\_MIG\_IMMIGRATION 138  
16 Row2 INTERNATIONAL\_MIG\_IMMIGRATION 91  
17 Row2 IMMIGRATION\_TOTAL 229  
18 Row2 INTERNAL\_MIG\_EMIGRATION 195  
19 Row2 INTERNATIONAL\_MIG\_EMIGRATION 12  
20 Row2 EMIGRATION\_TOTAL 207

Demo2

21 What is the INTERNATIONAL\_MIG\_EMIGRATION for Burgkirchen? 12 13 19

# Our Customers: Data Pain



**@Tobi** What was our revenue last month?  
How much did we sell last week?

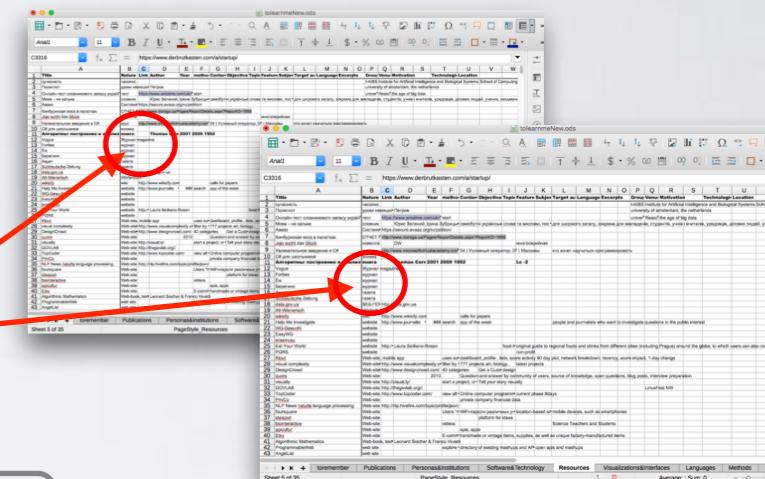
Where did I save this table?  
What was that SQL command?



# Our Customers: Our Solution



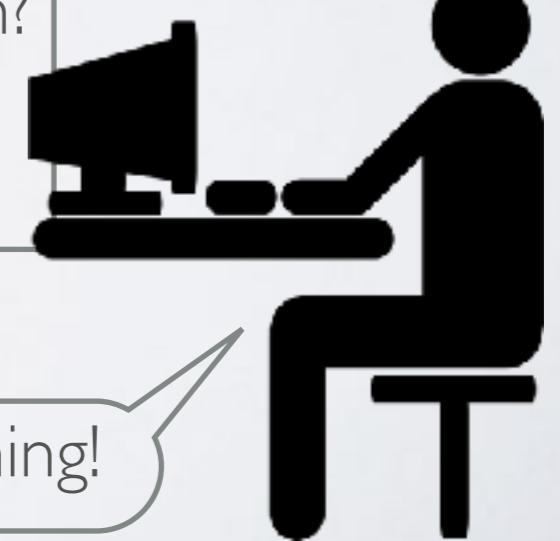
**@Michi** 25,670 EUR  
200 stk.



The screenshot shows a Microsoft Excel spreadsheet with data for 200 items. The columns include Title, Description, and Price. Two specific rows are circled in red: row 10 (containing '25,670 EUR') and row 200 (containing '200 stk.').

Title	Description	Price
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7
8	8	8
9	9	9
10	10	25,670 EUR
11	11	11
12	12	12
13	13	13
14	14	14
15	15	15
16	16	16
17	17	17
18	18	18
19	19	19
20	20	20
21	21	21
22	22	22
23	23	23
24	24	24
25	25	25
26	26	26
27	27	27
28	28	28
29	29	29
30	30	30
31	31	31
32	32	32
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57	57	57
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192	192	192
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195	195	195
196	196	196
197	197	197
198	198	198
199	199	199
200	200	200

**@Franzl** What was our revenue last month?  
How much did we sell last week?



**@Tobi** Let's go have a coffee?

**@Michi** Sure thing!



<https://m.me/OpenDataAssistant>

Make data your friend!