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Web Science - Investigating the Future of Information and Communication

# WikiTimes

# A Knowledge Base of News Events with Daily Summaries from the Crowd

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ALEXANDRIA Workshop, 16 September 2014



#### **Online News**





### **Temporal Summarization**

- Timelines summaries provide an overview of relevant events
- Important for news stories that last months, or years:
  - e.g. Syrian civil war and Ukraine crisis
- News agencies: manual creation is expensive, limited, slow, if exists at all.
- Automatic generation of timelines is often of a low quality

#### Anti-Gaddafi uprising

**2011** February - Arrest of human rights campaigner sparks violent protests in eastern city of Benghazi that rapidly spread to other cities. Authorities use aircraft to attack protestors. Gaddafi insists that he will not quit, and remains in control of the capital, Tripoli.



**2011** March - UN Security Council authorises a no-fly zone over Libya and air strikes to protect civilians, over which NATO assumes command.

Backed by extensive NATO air raids, Libyan rebels initially capture territory but are then forced back by better-armed pro-Gaddafi forces. Rebels ask West for arms.

2011 July - The international Contact Group on Libya formally recognises the main opposition group, the National Transitional Council (NTC), as the legitimate government of Libya.

2011August - Rebels swarm into Col Gaddafi's fortress compound in Tripoli, six months after the uprising began. With only a few remaining strongholds under his control, Col Gaddafi goes into hiding. His wife and three of his children flee to neighbouring Algeria.

2011 August-September - African Union joins 60 countries which have recognised the NTC as the new Libyan authority.

2011 20 October - Col Gaddafi is captured and killed.

Three days later, the NTC declares Libya to be officially "liberated" and announces plans to hold elections within eight months.

2011 November - Saif al-Islam, the fugitive son of former Libyan leader Muammar Gaddafi, is captured, becoming the last key Gaddafi family member to be seized or killed.

Col Gaddafi killed



The colonel's ruthless and quixotic 42-year rule came to an ignominious end

Obituary: Muammar Gaddafi How Gaddafi died



#### News Stories on Wikipedia

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livii wh with too cor unr ten the Afte		This a of Crin a t t t t t t t t t t t t t t t t t t	2014 pro-Russian unrest in Ukraine From Wikipedia, the free encyclopedia This article is about the unrest throughout Ukraine. For the Russian military intervention there, see 2014 Russian military intervention in Ukraine. For the crisis in Crimea, crisis. For the armed conflict, see War in Donbass. Since the end of February 2014, demonstrations by pro-Russian and anti-government groups have taken place in major cities across the eastern and southern regions of Ukraine, in the aftermath of the Euromaidan movement and the 2014 Ukrainian revolution. During the first stage of the unrest. Crimea was appaged by the Puscian Enderstion after a crisis in the region. Puscian military intervention and an		raine. For the crisis in Crimea, see 2014 Crimean 2014 pro-Russian unrest in Ukraine Part of the aftermath of the 2014 Ukrainian revolution		
oft afo			Stage of the unrest, chinea was annexed by the Rt         internationally criticized referendum. Protests in Do         the Ukrainian government to launch a military count         Contents [hide]         1 Background         1.1 Public opinion         1.2 Anti-Maidan and paid protesters         1.3 Media portrayal         2 Timeline         3 Unrest by region         3.1 Crimea         3.2 Donetsk Oblast         3.2.3 Referendum         3.2.4 Continued fighting	e Russian Federation after a crisis in the region, Russian military intervention and an i Donetsk and Luhansk oblasts escalated into an armed separatist insurgency. <sup>[56][57]</sup> This led ounter-offensive against the insurgents, which resulted in the ongoing War in Donbass. <sup>[58]</sup>	Apple of protests by region, indicating severity of the unrest at its peak         Date       23 February 2014-ongoing (6 months, 3 weeks and 3 days)         Location       Eastern Ukraine Southern Ukraine Crimea		



#### News Stories on Wikipedia

#### Syrian Civil War

From Wikipedia, the free encyclopedia

"War in Syria" redirects here. For other wars in Syria, see Syrian War (disambiguation).



This article **may be too long to read and navigate comfortably**. Please consider splitting content into sub-articles or condensing it. (*November 2013*)

The **Syrian Civil War** (Arabic: الحرب الأهلية السورية), also known as the **Syrian Uprising**, is an ongoing armed conflict taking place in Syria. The unrest began in the early spring of 2011 with nationwide protests against President Bashar al-Assad's government, whose forces responded with violent crackdowns. The conflict gradually morphed from popular protests to an armed rebellion after months of military sieges.<sup>[69]</sup> The armed opposition consists of various groups that were formed during the course of the conflict, including the Free Syrian Army and the Islamic Front.

In 2013, Hezbollah entered the war in support of the Syrian army.<sup>[70][71]</sup> In the east, the Islamic State (IS), a jihadist militant group which was initially linked to Al-Qaeda in Iraq, made rapid military gains in both Syria and Iraq, eventually conflicting with the other rebels. In July 2014, ISIS controlled a third of Syria's territory and most of its oil and gas production, thus establishing itself as the major opposition force.<sup>[72]</sup>

The Syrian government is upheld by military support from Russia, which was expanded in the winter of 2013–14,<sup>[73]</sup> and Iran, while Qatar, Saudi Arabia, Turkey and United States transferred weapons to the rebels.<sup>[74][75]</sup> The US, the UK and European and Arab states have declared a readiness to support the mainstream Syrian opposition.<sup>[76]</sup> Owing to the nature of this involvement, the international response to the conflict has been described as

#### Syrian Civil War

Part of the Arab Spring and spillover of the Iraqi insurgency



Clockwise from top left: Destroyed vehicles in Aleppo; refugee camp on the Turkish border; artillery firing on Homs; victims of the Ghouta chemical attack. (For a war map of the current situation, see here)

Date	15 March 2011 – present
	(3 years, 6 months and 1 day)
Location	Syria (with spillovers in neighboring countries)



#### **News Stories on YAGO**

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### **Current Events on Wikipedia**













#### WikiTimes System Overview





### WikiTimes Dataset

#### Collected events from the past

15 years

#stories in total	882
#events in total	51378
#events with story link	8206
#events without story link	43172
#events with topical category	24371
#entities	199788

Event Relation			
Relation	#Total facts	#Evaluated facts	Accuracy
happenedOnDate	51378	512	0.973 +- 0.014
belongsToStory	8206	100	1.000 +- 0.000
linksTo (Entity)	170001	512	0.982 +- 0.011
category	24371	300	0.979 +- 0.015

#### **Quality assessment**

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### WikiTimes Dataset





## WikiTimes Dataset

Content of daily summaries is rarely revised after one week of publication





## WikiTimes Dataset

#### Comparison with timelines published by news agencies

- 21 timeline summaries on four example news stories:
  - e.g. Egypt Revolution, Syria Civil War, Yemen Crisis and Libyan Civil War
- Comparison with timelines published by 25 popular news agencies:
  - e.g. CNN, BBC, Reuters, New York Times, etc.
  - between January 2011 and July 2013.





# **Ongoing Work - Enrichment**

- Event to story link:
  - Only 16% of events are linked to news stories
  - Find links by measuring the overlap between an event and a timeline
    - Temporal distance
    - Entity overlap
    - Topic similarity (category, summary, news article content)
- Story to Story link:
  - Merging similar stories
  - Grouping related stories
- Improving Categorization
- Detecting location



# http://wikitimes.l3s.de/rdf/

lome   All Event	
Property	Value
sc:attendee	<http: 189="" rdf="" resource="" wikiref="" wikitimes.l3s.de=""></http:>
sc:attendee	<http: 190="" rdf="" resource="" wikiref="" wikitimes.i3s.de=""></http:>
sc:attendee	<http: 191="" rdf="" resource="" wikiref="" wikitimes.i3s.de=""></http:>
wikitimes:property/category	<http: 13="" category="" rdf="" resource="" wikitimes.i3s.de=""></http:>
wikitimes:property/category	<http: 16="" category="" rdf="" resource="" wikitimes.i3s.de=""></http:>
wikitimes:property/category	<http: 3="" category="" rdf="" resource="" wikitimes.i3s.de=""></http:>
wikitimes:property/category	<http: 6="" category="" rdf="" resource="" wikitimes.i3s.de=""></http:>
wikitimes:property/confidence	0.956756E0
sc:description	Arsenal F.C. play their last game at Highbury, or Arsenal Stadium. They have played there for 93 years
sc:endDate	2006-05-07 (xsd:date)
wikitimes:property/happenedOnDate	2006-05-07 (xsd:date)
yago:happenedOnDate	2006-05-07 (xsd:date)
dc:identifier	50 (xsd:integer)
rdfs:label	Event #50
yago:linksTo	<http: 189="" rdf="" resource="" wikiref="" wikitimes.i3s.de=""></http:>
yago:linksTo	<http: 190="" rdf="" resource="" wikiref="" wikitimes.i3s.de=""></http:>
yago:linksTo	<http: 191="" rdf="" resource="" wikiref="" wikitimes.l3s.de=""></http:>
wikitimes:property/sourceld	\$ 56
sc:startDate	2006-05-07 (xsd:date)
sc:superEvent	<http: 507="" newsstory="" rdf="" resource="" wikitimes.l3s.de=""></http:>
rdf:type	sc:Event

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