Capturing the Web Today for Tomorrow

Innovations in capturing and analyzing social media and websites for the new scholarly record

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We have a **problem** facing our collective cultural heritage.

This is a scale that **boggles the mind** – compare it to the Old Bailey 197,745 trials between 1674 and 1913)

Scarcity

~~Scarcity~~

Abundance

… and the 1990s are history (as painful as it is to say).

And we have **fears**...

The decisions we make today will lay the foundations for how we work with **born-digital cultural heritage**.

Won't be enough - we'll need search engines and discovery tools.

But what will our search engines look like?

INPUT

Blackbox

OUTPUT

Stimulus

Response

Our nightmare:
Historians rely uncritically on date-ordered or algorithmically-ranked keyword search results, putting them at mercy of search algorithms they do not understand.

Some disturbing trends in this area...

The historians who came to the meeting were intelligent, kind, and encouraging. But they didn't seem to have a good sense of how to wield quantitative data to answer questions, didn't have relevant computational skills, and didn't seem to have the time to dedicate to a big multiauthor collaboration. It's not their fault: these things don't appear to be taught or encouraged in history departments right now.

-Erez Leiberman Aiden and Jean-Baptiste Michel

We need *interdisciplinary collaboration* to tackle this problem!

Team(s)

Web Archives for Historical Research

Historians

Computer Scientists

Librarians
Archivists

Governance

Projects & Platforms

webarchives.ca

Shine
https://github.com/ukwa/shine/

Canadian Political Parties & Political Interest Group Collection (ARCHIVE-IT/Toronto)

- 50 Websites
  - All major political parties
  - Many minor political parties
  - Political interest groups
- Collected quarterly between 2005 and present

The Current Interface..

- **Very limited** - simple search engine, some advanced options; no facets
- **Great collection**.. But nobody uses them.

14 Million Solr docs!

Shine

webarchives.ca

Twitter

twarc

docnow.io

Twitter Developer Documentation

Products & Services

Best practices

API overview

Websites

Cards

OAuth

REST APIs

  API Rate Limits

  Rate Limits: Chart

  The Search API

  The Search API: Tweets by Place

  Working with Timelines

  Collections

  Media

  Curator

  Search

  TON

  Reference Documentation

The Search API

The Twitter Search API is part of Twitter's REST API. It allows queries against the indices of recent or popular Tweets and behaves similarly to, but not exactly like the Search feature available in Twitter mobile or web clients, such as Twitter.com search. The Twitter Search API searches against a sampling of recent Tweets published in the past 7 days.

Before getting involved, it's important to know that the Search API is focused on relevance and not completeness. This means that some Tweets and users may be missing from search results. If you want to match for completeness you should consider using a Streaming API instead.

A detailed reference on this API endpoint can be found at GET search/tweets.

How to build a query

The best way to build a query and test if it's valid and will return matched Tweets is to first try it at twitter.com/search. As you get a satisfactory result set, the URL loaded in the browser will contain the proper query syntax that can be reused in the API endpoint. Here's an example:

1. We want to search for Tweets referencing @twitterapi account. First, we run the search on twitter.com/search
2. Check and copy the URL loaded. In this case, we got: https://twitter.com/search?q=%40twitterapi
3. Replace "https://twitter.com/search" with "https://api.twitter.com/1.1/search/tweets.json" and you will get:
   https://api.twitter.com/1.1/search/tweets.json?q=%40twitterapi
4. Execute this URL to do the search in the API

Please note that the API requires that the request be authenticated (check Authentication & Authorization documentation for more details on this). Also note that the search results at twitter.com may return historical results, while the Search API usually only serves Tweets from the past week.

Query operators

Twitter Developer Documentation

Products & Services

Best practices

API overview

Websites

Cards

OAuth

REST APIs

Streaming APIs

    Public streams

    User Streams

    Connecting

    Processing

    Reference

Ads API

Gnip

MoPub

Fabric

Tools & Support

Streaming APIs

Overview

The Streaming APIs give developers low latency access to Twitter's global stream of Tweet data. A streaming client will be pushed messages indicating Tweets and other events have occurred, without any of the overhead associated with polling a REST endpoint.

If your intention is to conduct singular searches, read user profile information, or post Tweets, consider using the REST APIs instead.

Twitter offers several basic streaming endpoints, each customized to certain use cases.

Public streams	Streams of the public data flowing through Twitter. Suitable for following specific users or topics, and data mining.
User streams	Single-user streams, containing roughly all of the data corresponding with a single user's view of Twitter.
Site streams	The multi-user version of user streams. Site streams are intended for servers which must connect to Twitter on behalf of many users. **Site Streams is a closed beta. Applications are no longer being accepted.**

Access to higher volume, real-time data from Twitter is available commercially via Gnip.

Differences between Streaming and REST

Connecting to the streaming API requires keeping a persistent HTTP connection open. In many cases this involves thinking about your application differently than if you were interacting with the REST API. For an example, consider a web

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#elxn42

code{4}lib
JOURNAL

An Open-Source Strategy for Documenting Events: The Case Study of the 42nd Canadian Federal Election on Twitter

This article examines the tools, approaches, collaboration, and findings of the Web Archives for Historical Research Group around the capture and analysis of about 4 million tweets during the 2015 Canadian Federal Election. We hope that national libraries and other heritage institutions will find our model useful as they consider how to capture, preserve, and analyze ongoing events using Twitter.

While Twitter is not a representative sample of broader society – Pew research shows in their study of US users that it skews young, college-educated, and affluent (above $50,000 household income) – Twitter still represents an exponential increase in the amount of information generated, retained, and preserved from 'everyday' people. Therefore, when historians study the 2015 federal election, Twitter will be a prime source.

On August 3, 2015, the team initiated both a Search API and Stream API collection with twarc, a tool developed by Ed Summers, using the hashtag #elxn42. The hashtag referred to the election being Canada's 42nd general federal election (hence 'election 42' or elxn42). Data collection ceased on November 5, 2015, the day after Justin Trudeau was sworn in as the 42nd Prime Minister of Canada. We collected for a total of 102 days, 13 hours and 50 minutes.

To analyze the data set, we took advantage of a number of command line tools, utilities that are available within twarc, twarc-report, and jq. In accordance with the Twitter Developer Agreement & Policy, and after ethical deliberations discussed below, we made the tweet IDs and other derivative data available in a data repository. This allows other people to use our dataset, cite our dataset, and enhance their own research projects by drawing on #elxn42 tweets.

Our analytics included:

- *breaking tweet text down by day to track change over time;*

- *client analysis, allowing us to see how the scale of mobile devices affected medium interactions;*

- *URL analysis, comparing both to Archive-It collections and the Wayback Availability API to add to our understanding of crawl completeness;*

- *and image analysis, using an archive of extracted images.*

Our article introduces our collecting work, ethical considerations, the analysis we have done, and provides a framework for other collecting institutions to do similar work with our off-the-shelf open-source tools. We conclude by ruminating about connecting Twitter archiving with a broader web archiving strategy.

by Nick Ruest and Ian Milligan

Introduction

During the 2015 Canadian federal elections, we captured 3,918,932 tweets written using the #elxn42 hashtag: thoughts on the nature and stature of political candidates or parties, live running commentary during leader debates, exhortations to vote, and witty ripostes or jokes to liven up the long campaign. Political scientists, journalists, and other researchers can use these tweets as evidence of sentiment amongst a

October 17, 2015

October 18, 2015

October 19, 2015

October 20, 2015

1,203,867 #elxn42 images

Dataset is available here. | Original 32G png available here. | Tiled with deepzoom.py.

#elxn42 tweets (42nd Canadian Federal Election)

Description	Tweet ids for #elxn42 tweets. Tweets can be "hydrated" with Ed Summers' twarc (https://github.com/edsu/twarc). twarc.py --hydrate elxn42-tweet-ids.txt > elxn42-tweets.json. Hydrating will recreate the original tweet(s) in json format, provided the content is still available on Twitter. This dataset is the combination of hydrated http://hdl.handle.net/10864/11310 tweet ids, and http://hdl.handle.net/10864/11270.
Subject	Other
Related Publication	Ruest, Nick, Milligan, Ian. "An Open-Source Strategy for Documenting Events: The Case Study of the 42nd Canadian Federal Election on Twitter" Code4Lib Journal. 32 (2016)
Notes	Type: License Notes: CC BY 2.0 CA https://creativecommons.org/licenses/by/2.0/ca/;

Files   Metadata   Terms   Versions

Search this dataset...   🔍 Find

5 Files   ⬇ Download

☐

☐ elxn42-tweet-ids.txt
Plain Text - 71.0 MB - Dec 6, 2015 - 29 Downloads
MD5: 98b204a8fc0dbae70e5480c5d4a40a50;
line-oriented #elxn42 tweet ids
⬇ Download

☐ elxn42-tweet-tags.txt
Plain Text - 1016.1 KB - Jan 25, 2016 - 7 Downloads
MD5: 59b8161616ddd122ff844dd82a8eb4d9;
#elxn42 hashtags with counts
⬇ Download

☐ elxn42-tweets-images.txt
Plain Text - 54.9 MB - Jan 25, 2016 - 5 Downloads
MD5: 79376146858835c268cec312c4f7d945;
⬇ Download

#elxn42 web crawl

Description

Consists of a web crawl of unique URLs tweeted with the #elxn42 hashtag. #elxn42 collection took place from August 3, 2015 - November 5, 2015. Unique URLs were extracted from the dataset, and harvested with Heritrix on January 29, 2016 - February 8, 2016.

Download

- warc: #elxn42 web crawl.gz
- cdx: #elxn42 web crawl.cdx
- wat: #elxn42 web crawl.wat.gz
- Seed list: #elxn42 web crawl.txt
- Heritrix configuration: crawler-beans.cxml

In collections

- #elxn42

Details

Title:	#elxn42 web crawl
Creator(s):	Nick Ruest
Note:	Tweet ids: http://hdl.handle.net/10864/11311
Identifier (local):	WEB-20160208134917869-00013-3991~rho.library.yorku.ca~9191-ELXN42
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Type:	Website
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	Canadian federal election, 2015
	Canadian politics
	Federal politics
	Canada
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PUID:	x-fmt/266
Funding:	This research was supported by a research grant -- 435-2015-0011 -- issued by Social Sciences and Humanities Research Council.
Rights:	Use of this resource is governed by the terms and conditions of the Creative Commons "Attribution" License (http://creativecommons.org/licenses/by/2.0/)

#WomensMarch

the time I stopped collecting a week later, we'd amassed 14,478,518 unique tweet ids from 3,582,495 unique users, and at one point hit around 1 million tweets in a single hour.

(Generated with Peter Binkley's twarc-report)

This put #WomensMarch well over 1% of the overall Twitter stream, which causes dropped tweets if you're collecting from the Filter API, so I used the strategy of using the both the Filter and Search APIs for collection. (If you curious about learning more about this, check out Kevin Driscoll and Shaw Walker's "Big Data, Big Questions | Working Within a Black Box: Transparency in the Collection and Production of Big Twitter Data", and Jiaul H. Paik and Jimmy Lin's "Do Multiple Listeners to the Public Twitter Sample Stream Receive the Same Tweets?"). I've included the search and filter logs in the dataset. If you `grep "WARNING" WomensMarch_filter.log` `grep "WARNING" WomensMarch_filter.log | wc -l` you'll get a sense of the scale of dropped tweets. For a number of hours on January 22, I was seeing around 1.6 million cumulative dropped tweets!

#WomensMarch crawl; January 29-February 25, 2017

Description

Consists of a web crawl of unique URLs tweeted with the #WomensMarch hashtag. #WomensMarch collection took place from January 21-28, 2017. Unique URLs were extracted from the dataset, and harvested with Heritrix on January 29-February 25, 2017.

In collections

- #WomensMarch

Details

Title:	#WomensMarch crawl; January 29-February 25, 2017
Creator:	Nick Ruest
Note:	Tweet ids: http://dx.doi.org/10.5683/SP/ZEL1Q6
Identifier (local):	WEB-20170225184434201-00029-22858~rho.library.yorku.ca~9191-WomensMarch
Identifier (md5):	7d44ff2511a460d72dd34cfce414cecd
Type:	Website
Subject(s):	#WomensMarch politics activism
Date captured:	2017-01-29
File size:	89885679831
Funding:	This research was supported by a research grant -- 435-2015-0011 -- issued by Social Sciences and Humanities Research Council.
Rights:	Use of this resource is governed by the terms and conditions of the Creative Commons "Attribution" License (http://creativecommons.org/licenses/by/2.0/)

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```
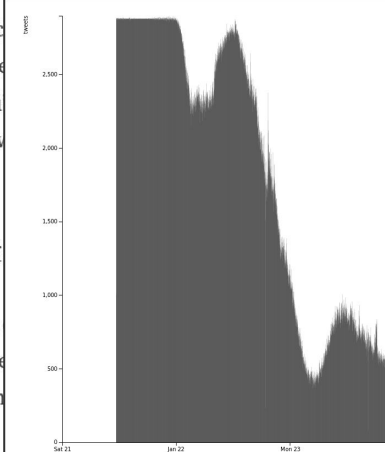
Tweet ID Datasets

Twitter's terms of service don't allow tweet datasets to be published on the web, but they do allow tweet identifier datasets to be shared. This speaks to content creators' right to be forgotten, while also allowing researchers to share their data with others.

This site is a catalog of datasets that are publicly available on the web. If you would like to turn these tweet identifier datasets back into the original JSON first download the dataset and then use the Hydrator desktop application, or Twarc if you are comfortable working at the command line.

You can add your own datasets to the catalog by following these instructions. If you'd like updates when datasets are added please subscribe to the RSS feed.

Women's March Tweet Ids

Creator: Justin Littman, Soomin Park

Tweets: 7,275,228

Published: 2017-02-03

Date Coverage: 2016-12-19 - 2017-01-23

Tags: WomensMarch, activism, politics

▸ Description

This *a* future of collection development

Institutional Collecting & Research Data

Warcbase

(Or, how can we work with web archives at scale?)

Warcbase

- Jimmy Lin (main developer, CS/lead), Ian Milligan (co-lead, history), Jeremy Wiebe (history/PhD), Alice Zhou (computer science, undergrad), Youngbin Kim (computer science, undergrad), Nick Ruest (librarian)
- Currently using it on the GeoCities and Canadian Politics web archives

Why **Warc**base

Warcbase (warcbase.org)

Two main facets

- A flexible data store: your own Wayback Machine

- **Scriptable analytics and data processing**

Funded by Mellon, SSHRC, NSERC, and Government of Ontario.

Warcbase

- Scalable
  - From Raspberry Pi to Desktop Computer to Server to Cluster, **all with same scripts and commands**
- Potentially very powerful
  - **Trantor**: 1.2PB of disk, 25 compute nodes (each w/ 128GB memory, 2×6-core Intel Xeon E5 v3 = 3.2TB memory and 300 current-generation Intel cores)
- In active development, led by **Jimmy Lin**, collaborator at the University of Waterloo

docs.warcbase.org

Warcbase Home Setup ▾ Web Archives ▾ Tweets ▾ Temporal Browsing ▾ 🔍 Search ← Previous Next → ⌂ GitHub

Extracting Domain Level Plain Text

All plain text

Plain text by domain

Plain text by URL pattern

Plain text minus boilerplate

Plain text filtered by date

Plain text filtered by language

Plain text filtered by keyword

Extracting Domain Level Plain Text

All plain text

This script extracts the crawl date, domain, URL, and plain text from HTML files in the sample ARC data (and saves the output to out/).

```
import org.warcbase.spark.rdd.RecordRDD._
import org.warcbase.spark.matchbox.{RemoveHTML, RecordLoader}

RecordLoader.loadArchives("src/test/resources/arc/example.arc.gz", sc)
  .keepValidPages()
  .map(r => (r.getCrawlDate, r.getDomain, r.getUrl, RemoveHTML(r.getContentString)))
  .saveAsTextFile("out/")
```

If you wanted to use it on your own collection, you would change "src/test/resources/arc/example.arc.gz" to the directory with your own ARC or WARC files, and change "out/" on the last line to where you want to save your output data.

Note that this will create a new directory to store the output, which cannot already exist.

If you want to run it in your Spark Notebook, the following script will show in-notebook plain text:

```
val r = RecordLoader.loadArchives("/path/to/warcs", sc)
.keepValidPages()
.map(r => {
```

Extract all Text

(20060222,liberal.ca,http://liberal.ca/bio_e.aspx?&id=35049,Liberal Party of Canada HOME THE TEAM THE P
ARTY MEDIA CENTRE COMMISSIONS YOUR RIDING   Omar Alghabra www.omaralghabra.com Home > Mississauga--E
rindale Riding Map (PDF) Omar Alghabra came to Canada at a very young age, and immediately knew Canada
was his home. He is was first elected 2006 as the Member of Parliament for Mississauga-Erindale. Mr. Al
ghabra is an experienced entrepreneur. For the past six years, he has worked for a large multinational
corporation, carrying out different responsibilities including quality assurance, project management, s
ales, contract management and management of a complete department handling a global mandate. Mr. Alghab
ra is an active member of his community. He is the former National President of the Canadian Arab Feder
ation (2004-2005) and a former member of the Community Editorial Board for the Toronto Star. (2003-2004
). Mr. Alghabra is currently a member of the Diversity Council for General Electric Canada and is activ
e in Junior Achievement for the Toronto Region. He was a member of the Multicultural Inter-Agency of Pe
el from 2001 to 2002. Mr. Alghabra has a degree in Mechanical Engineering from Ryerson University and a
 Masters in Business Administration (MBA) from York University.   Omar Alghabra 790 Burnamthorpe West,
Unit 10 905-276-2806   info@omaralghabra.ca Riding President Elias Hazineh Send an email
       Home | News | Your Riding | Contact Us | français This website is the property of the
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ral Party of Canada. Privacy Policy)
(20060222,liberal.ca,https://liberal.ca/news_e.aspx?id=11470,Liberal.ca HOME THE TEAM THE PARTY MEDIA C
ENTRE COMMISSIONS YOUR RIDING   Celebrating our National Flag   February 15, 2006 February 15 is Nationa
l Flag Day in Canada, which marks the 41st anniversary of the first raising of the maple leaf flag on P
arliament Hill. Today is a celebration of our shared values, common citizenship and sense of pride in t
his great country we call home. The Canadian flag is one of the most recognizable symbols in the world
and flies proudly to remind us all of who we are and where we come from. The maple leaf's symbolic orig
ins date back to the beginning of our nation's history, while the red and white bars on the flag repres
ent strength and unity. Canada's flag was adopted in 1964 under the courageous leadership of Liberal Pr
ime Minister Lester B. Pearson. The idea of changing the Red Ensign which featured the Britain's Union
Jack, was very controversial at the time, with the Conservative Party strongly opposed to changing the
status quo.   Facing strong Conservative resistance in the House of Commons, Pearson's minority governme
nt fought hard in the name of national unity and Canada's multicultural future to make the new flag a r
eality. In an impassioned speech to the House of Commons, Pearson said: "Mr. Speaker, it is for this g
eneration, for this Parliament, to give them and to give us all a common flag; a Canadian flag which, w
hile bringing together but rising above the landmarks and milestones of the past, will say proudly to t
he world and to the future: I stand for Canada." Thanks to Pearson's courageous leadership, Canadians a
cross this great nation celebrate our flag and what it stands for — a country and a citizenship that ar
e the envy of the world.   Home | News | Your Riding | Contact Us | fran
cais This website is the property of the Liberal Party of Canada and may not be reproduced in whole and

Extract all Text

Extract Entities

200606
Andrew Lewis
Bill
Bill Hulet
Brown
Bruce Abel
Bush
Camille Labchuk
Chandler
Cherfi
Chernushenko
David
David Chernsuhenko
koDavid Chernushenko
David Kay
Derek Pinto
Ed Broadbent
Elizabeth May
Eric Walton
Fannon
Gomery
Green
Harper
Harris
Jim
Jim Fannon
Jim Harris
Jim Harris Speech
John
Julie Baribeau
Junker
Kevin Colton
Labchuk
Layton
Leonardo DiCaprio
Manley
Mark Brooks
Mark MacGillivray
Martin
Michael Robinson
Milliken
Paul Martin

200607
Adrianne Carr
Andrew Lewis
Bill
Bill Hulet
Brown
Bruce Abel
Bush
Camille Labchuk
Chandler
Cherfi
Chernushenko
David
David Chernsuhenko
David Chernushenko
David Chernushenko E...
David Kay
Derek Pinto
Dietrich
Ed Broadbent
Elizabeth May
Eric Walton
Fannon
Gomery
Green
Harper
Harris
Jim
Jim Fannon
Jim Harris
Jim Harris Speech
John
Julie Baribeau
Junker
Kevin Colton
Labchuk
Layton
Manley

200608
Adrianne Carr
Allan Gribbin
Amélie Gingras
Andrew Lewis
Bill
Bill Hulet
Brown
Bruce Abel
Bush
Chandler
Cherfi
Chernushenko
Clements Verhoeven
David
David Chernushenko
David Kay
Derek Pinto
Dietrich
Ed Broadbent
Elizabeth May
Eric Walton
Fannon
Gomery
Green
Harper
Harris
Jim
Jim Harris
Jim Harris Speech
John
Junker
Kevin Colton
Kootenay-Columbia Jo...
Labchuk
Lawrence Redfern
Layton
Manley
Mark Brooks

200609
Adrianne Carr
Amélie Gingras
Brown
Bruce Abel
Bush
Cameron Wigmore
Chandler
Cherfi
Chernushenko
Chretien
David
David Chernushenko
David Kay
Derek Pinto
Dietrich
Dion
Elizabeth
Elizabeth May
Elizabeth May 10 mentions
Elizabeth Peloza
Eric Walton
Gomery
Green
Harper
Harris
Jasper
Jim
Jim Harris
Jim Harris Speech
John
Labchuk
Lougheed
Mackenzie
Manley
Martin
May
Mona Elaine Adilman ...
Paul Martin
Peter Foster
Pierre Pettigrew
Schiller

200610
Ambrose
Andrew Lewis
Bill
Bridget Doherty
Bush
Carol Gudz
Catharine Johannson
Chandler
Cherfi
Chernushenko
Daphne Wysham
David
David Chernushenko
David Kay
Derek
Derek Pinto
Dundas
Elizabeth
Elizabeth Goes
Elizabeth May
Elizabeth May Say
Eric Walton
Gagnon
Gomery
Green
Grenon
Halton
Harper
Harris
Jim
Jim Harris
John
Jude Larkin
Judith
Kyle Grice
Labchuk
Manley
Mark MacGillivray
Martin
May
Melanie Ransom
Michael Grayson
Michele
Paul Martin
Richard Reble
Sharon Labchuk

200611
Ambrose
Andrew Lewis
Bill
Bill Clinton
Bush
Chandler
Cherfi
Chernushenko
Chris Alders
Daphne Wysham
David
David Chernushenko
David Cox
David Kay
David Suzuki
Derek
Derek Pinto
Dundas
Edward Burtynsky
Elizabeth
Elizabeth May
Eric Walton
Garth Turner
Gomery
Green
Halton
Harper
Harris
Jim
Jim Harris
Jim Harris Speech
John
Julie Baribeau
Labchuk
Manley
Margaret
Mark MacGillivray
Martin
May
Paul
Paul Martin
Ross
Sharon Labchuk

Extract Entities

Extract Entities

Distribution of Locations

And a move away from content and towards **structured metadata**...

An Example

To: Tony Smith <tsmith@yorku.ca>

From: Ian Milligan
(i2millig@uwaterloo.ca)

Re: Lunch

Date: 6 March @ 1034 GMT

Hi Tony –

See you after class?

Ian

Tells you little!

But what if I emailed him every Monday? Or Friday? Or every day?

... and we can **create indexes** to provide search access to collections.

So we have this tool…
how have we used it?

WALK

Web Archives for Longitudinal Knowledge (WALK)

Ian Milligan (Co-PI, UW) + Nick Ruest (Co-PI, York), w/ Geoff Harder, Todd Suomela, Sonya Betz, Peter Binkley, Geoffrey Rockwell (Alberta), Jefferson Bailey (Internet Archive), and John Simpson (Compute Canada).

WALK

Currently ~ 25 Canadian partners who collect web archives, ~ 130 collections.

Archive-It is the back-end provider of web archiving services.

WALK

Current interfaces are **very limited** - simple search engine, some advanced options, no facets

Great collections, but nobody uses them.

How could we **build** better access?

Preparing our dataset!

Overview

Limit Summary

Instances
Used 2 of 10

VCPUs
Used 18 of 20

RAM
Used 75GB of 75GB

Floating IPs
Allocated 2 of 2

Security Groups
Used 1 of 10

Volumes
Used 1 of 10

Volume Storage
Used 15.8TB of 15.8TB

Usage Summary

Select a period of time to query its usage:

From: 2016-06-01   **To:** 2016-06-01   [Submit]   The date should be in YYYY-mm-dd format.

Active Instances: 2 **Active RAM:** 75GB **This Period's VCPU-Hours:** 437.23 **This Period's GB-Hours:** 11246.43 **This Period's RAM-Hours:** 1865498.75

Usage

⬇ Download CSV Summary

Instance Name	VCPUs	Disk	RAM	Time since created

Project

Compute

Overview

Instances

Volumes

Images

Access & Security

Network

Orchestration

Identity

```
ARCHIVEIT-1830-NONE-FWPGCP-20111003001238-00494-crawling209.us.archive.org-6681.warc.gz      ARCHIVEIT-1830-WEEKLY-JOB197257-20160219213119199-00000.warc.gz
ARCHIVEIT-1830-NONE-FWPGCP-20111003001721-00495-crawling209.us.archive.org-6681.warc.gz      ARCHIVEIT-1830-WEEKLY-JOB197257-20160220144613720-00001.warc.gz
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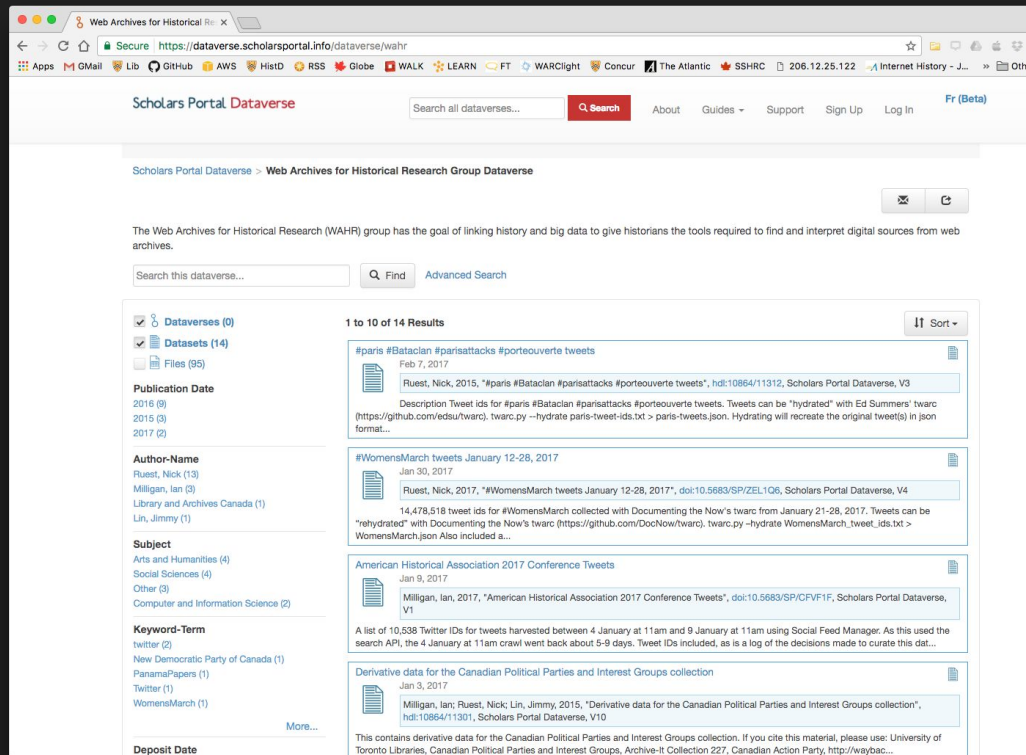
Public Access

Providing Access to Derivative Datasets

Want to do network diagrams like Ian showed? All collections have data.

List of URLs, domains

(As well as social media data, etc.)

~~Shine~~

Blacklight

WebArchives.ca

- Warcbase with a GUI front end

- Archivists/Librarians bring their collections, generate derivatives

- Hosted with Compute Canada

~~14 Million Solr docs!~~

100+ Million Solr docs!

```
          TikaExtractor.extract#extract(#=2291683, time=960340.22ms, avg=2.39#/ms 0.42ms/#, 0.67%)
          TikaExtractor.extract#parse(#=2291683, time=13045791.36ms, avg=0.18#/ms 5.69ms/#, 9.13%)
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          HTMLAnalyzer.analyze#parser(#=2117195, time=5677872.72ms, avg=0.37#/ms 2.68ms/#, 3.97%)
            HtmlFeatureParser.parse#jsouparse(#=2117195, time=3893471.84ms, avg=0.54#/ms 1.84ms/#, 2.73%)
            HtmlFeatureParser.parse#featureextract(#=2117195, time=1214905.31ms, avg=1.74#/ms 0.57ms/#, 0.85%)
        PDFAnalyzer.analyze(#=32238, time=6778115.05ms, avg=0.00#/ms 210.25ms/#, 4.74%)
      WARCIndexer.extract#archeaders(#=5451459, time=799793.76ms, avg=6.82#/ms 0.15ms/#, 0.56%)
SolrRecord.removeControlCharacters#total(#=407986927, time=2037130.28ms, avg=200.28#/ms 0.00ms/#, 1.43%)
  SolrRecord.sanitiseUTF8(#=407986927, time=490146.14ms, avg=832.38#/ms 0.00ms/#, 0.34%)
Parsing Archive File [472/2771]:/data/ALBERTA_university_of_alberta_websites/ARCHIVEIT-1830-NONE-CHONHQ-20111006081145-00043-crawling205.us.archive.org-6681.warc.gz
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  WARCIndexerCommand.parseWarcFiles#docdelivery(#=4030803, time=2618673.42ms, avg=1.54#/ms 0.65ms/#, 1.83%)
    WARCIndexerCommand.checkSubmission#solradd(#=80616, time=2610861.06ms, avg=0.03#/ms 32.39ms/#, 1.83%)
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SolrRecord.removeControlCharacters#total(#=408023959, time=2037350.77ms, avg=200.27#/ms 0.00ms/#, 1.42%)
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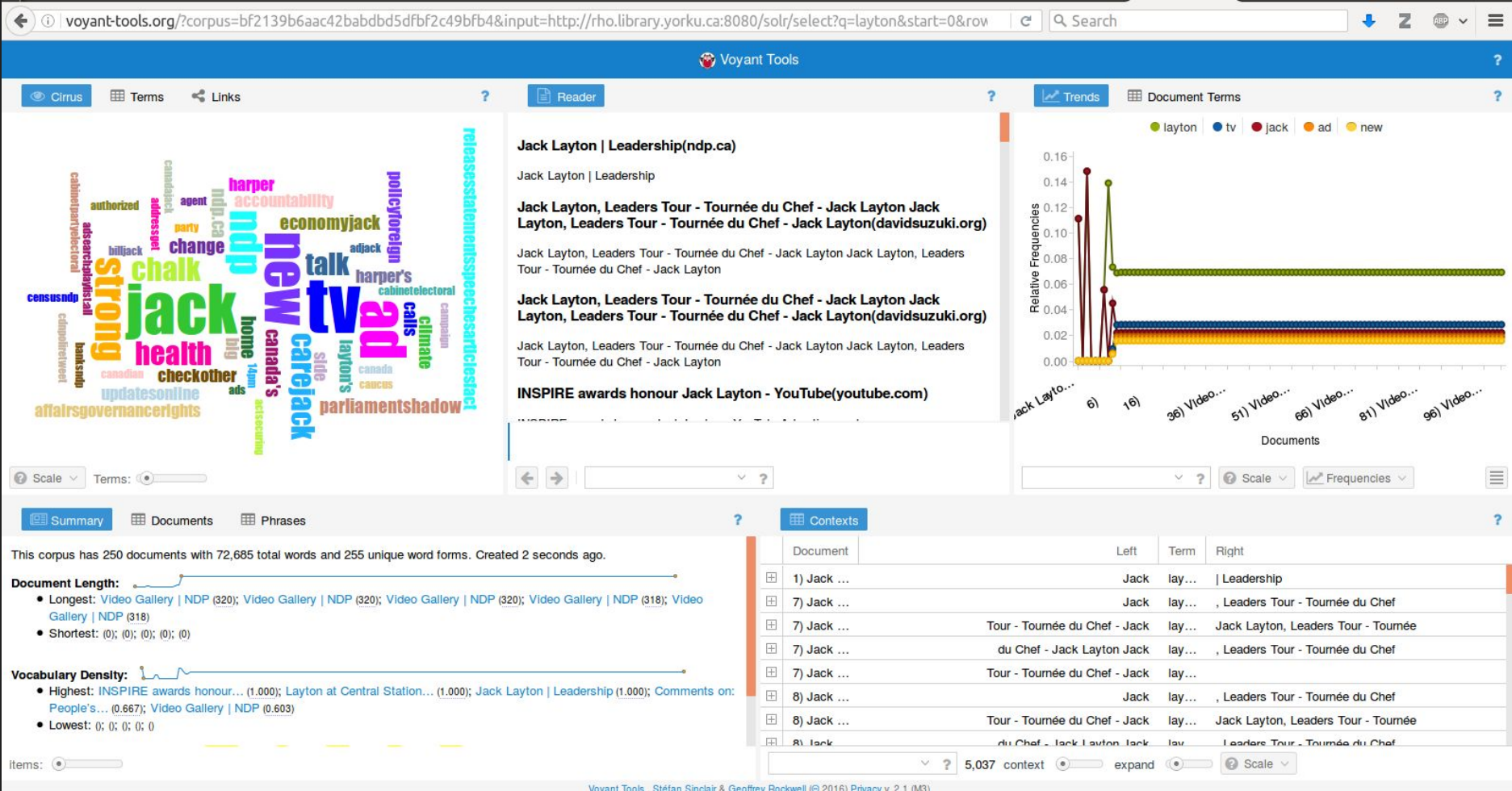
Finding famous people in WARClight, by Ian Milligan

voyant-tools.org/?corpus=bf2139b6aac42babdbd5dfbf2c49bfb4&input=http://rho.library.yorku.ca:8080/solr/select?q=layton&start=0&row

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📄 Reader

📈 Trends | ⊞ Document Terms

● layton ● tv ● jack ● ad ● new

Jack Layton | Leadership(ndp.ca)

Jack Layton | Leadership

Jack Layton, Leaders Tour - Tournée du Chef - Jack Layton Jack Layton, Leaders Tour - Tournée du Chef - Jack Layton(davidsuzuki.org)

Jack Layton, Leaders Tour - Tournée du Chef - Jack Layton Jack Layton, Leaders Tour - Tournée du Chef - Jack Layton

Jack Layton, Leaders Tour - Tournée du Chef - Jack Layton Jack Layton, Leaders Tour - Tournée du Chef - Jack Layton(davidsuzuki.org)

Jack Layton, Leaders Tour - Tournée du Chef - Jack Layton Jack Layton, Leaders Tour - Tournée du Chef - Jack Layton

INSPIRE awards honour Jack Layton - YouTube(youtube.com)

Relative Frequencies

0.16 0.14 0.12 0.10 0.08 0.06 0.04 0.02 0.00

Jack Layto... 6) 16) 36) Video... 51) Video... 66) Video... 81) Video... 96) Video...

Documents

Scale | Terms:

Scale | 📈 Frequencies

Summary | ⊞ Documents | ⊞ Phrases

⊞ **Contexts**

This corpus has 250 documents with 72,685 total words and 255 unique word forms. Created 2 seconds ago.

Document Length:
- Longest: Video Gallery | NDP (320); Video Gallery | NDP (320); Video Gallery | NDP (320); Video Gallery | NDP (318); Video Gallery | NDP (318)
- Shortest: (0); (0); (0); (0); (0)

Vocabulary Density:
- Highest: INSPIRE awards honour... (1.000); Layton at Central Station... (1.000); Jack Layton | Leadership (1.000); Comments on: People's... (0.667); Video Gallery | NDP (0.603)
- Lowest: 0; 0; 0; 0; 0

items:

Document	Left	Term	Right
1) Jack ...	Jack	lay...		Leadership
7) Jack ...	Jack	lay...	, Leaders Tour - Tournée du Chef
7) Jack ...	Tour - Tournée du Chef - Jack	lay...	Jack Layton, Leaders Tour - Tournée
7) Jack ...	du Chef - Jack Layton Jack	lay...	, Leaders Tour - Tournée du Chef
7) Jack ...	Tour - Tournée du Chef - Jack	lay...	, Leaders Tour - Tournée du Chef
8) Jack ...	Jack	lay...	, Leaders Tour - Tournée du Chef
8) Jack ...	Tour - Tournée du Chef - Jack	lay...	Jack Layton, Leaders Tour - Tournée
8) Jack ...	du Chef - Jack Layton Jack	lay	Leaders Tour - Tournée du Chef

5,037 context expand Scale

warcbase

Again :-)

WALK

- Mass Ingest Script to take each collection and:

  - Extract hyperlinks and generate gephi files;

  - Extract all URLs and domain counts;

  - Extract plain text;

Links!

- https://uwaterloo.ca/web-archive-group/

- https://github.com/web-archive-group/

- https://github.com/ianmilligan1/

- https://github.com/ruebot

- http://dataverse.scholarsportal.info/dvn/dv/wahr

Contact

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ruestn@yorku.ca

Ian Milligan: @ianmilligan1

i2milligan@uwaterloo.ca

Thanks very much!