

Archiving Web Content

Jean-Christophe Peyssard

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ARCHIVING WEB CONTENT

> DHIB. 2019

Jean-Christophe Peyssard Head of Digital Humanities Institut français du Proche-Orient (Ifpo) jc.peyssard@ifporient.org



Who Am I?

Research Ingineer from CNRS at the French Institute of the Near East, Head of Digital Humanities

- Ifpo: http://www.ifporient.org/jean-christophe-peyssard/
- Linkedin: http://fr.linkedin.com/pub/jean-christophe-peyssard/22/705/782/
- ORCID: 0000-0002-8503-2217
- Google Scholar : https://scholar.google.com/citations?user=32cZHPsAAAAJ
- HAL: https://cv.archives-ouvertes.fr/jcpeyssard



Institut français du Proche-Orient (Ifpo) MEAE / CNRS – UMIFRE 6 / USR 3135







Ifpo: Institut français du Proche-Orient / French Institute of the Near East

Événements -





Publications -

Annuaire -

À propos -



Appel à candidature :

Sirat al-Malik al-Zahir





ÉVÉNEMENTS

6000 images archéologiques de la Syrie en libre accès



APPEL À CANDIDATURE / LIBAN

Offre de stage : assistant·e de médiation scientifique (31/01 /2019)



CONFÉRENCES / ÉVÉNEMENTS /

Philosophie et mathématique dans l'Islam classique (10/01



Rejoindre l'Ifpo -

ÉVÉNEMENTS 18/12/2018

Ressources *

6000 images archéologiques de la Syrie en libre accès

Au cours de l'été 2018, l'Institut français du Proche-Orient (Ifpo) a mis en ligne sur MédiHAL plus de 6000 images archéologiques de la Syrie issues de ses fonds documentaires. Ce sont plus de 8500 images scientifiques qui sont aujourd'hui accessibles en libre accès dans la collection de l'Ifpo. La réalisation de ce projet de mise en ligne et de valorisation a été rendu possible grâce au soutien...

PLUS

RECHERCHER

Q Saisissez votre recherche

EN DIRECT DES CARNETS DE L'IFPO

Corpus d'arabe parlé (2) : Contraintes et problèmes liés à la réalisation des corpus d'arabe parlé en interaction

Oui a tué Asmahan? d'Amir Nizar Zubi : un récit policier sur scène

Corpus d'arabe parlé (1) : Quels corpus d'arabe parlé en libre accès?

Réformes économiques et mobilisations sociales en Jordanie

« Oui a tué Asmahan? » d'Amir

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27 IFRE

34 pays

150 chercheurs

350 doctorants

800

manifestations scientifiques par an

+45000

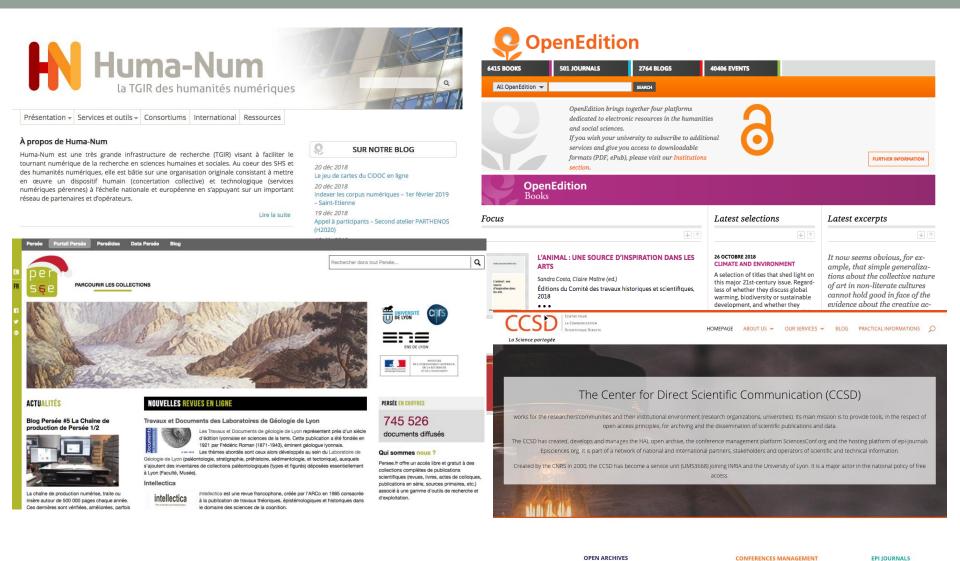
documents scientifiques dans le moteur de recherche

180

partenariats locaux

Un réseau unique de 27 centres de recherche français, répartis sur tous les continents, abordant toutes les sciences humaines et sociales, en contact avec les institutions de recherche locales et françaises.

French research infrastructures for Scholarly Communication & Digital Humanities



https://www.huma-num.fr/ https://www.openedition.org/ http://persee.fr/ https://www.ccsd.cnrs.fr/





CONFERENCES MANAGEMENT



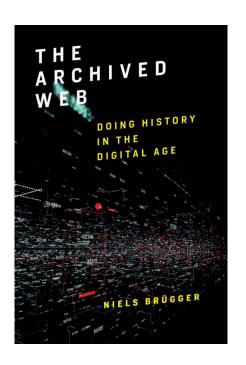
Shakk, from revolt to War in Syria: Conflict, displacements, uncertainties

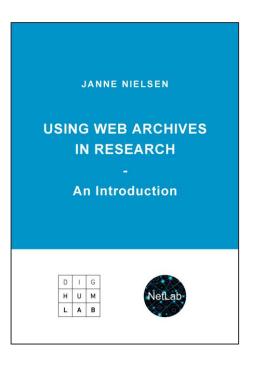


MOTS-CLEFS

Cycle de Conférence organisée par l'ANR Shakk dans le cadre des Rendez-







- Musiani, F., Paloque-Bergès, C., Schafer, V., & G. Thierry, B. (2019). Qu'est-ce qu'une archive du web?
 Retrieved from http://books.openedition.org/oep/8713; DOI: 10.4000/books.oep.8713
- Brügger, N. (2018). The Archived Web. Retrieved from http://www.worldcat.org/oclc/1057466800
- Nielsen, J. (2016). Using web archives in research: an introduction. Retrieved from http://www.worldcat.org/oclc/960018046

- "The <u>first-ever website (info.cern.ch)</u> was published on August 6, 1991 by British physicist Tim Berners-Lee while at CERN, in Switzerland"
- "There are over 1.5 billion websites on the World Wide Web today. Of these, less than 200 million are active" (http://www.internetlivestats.com)
- "In the April 2019 survey we received responses from 1,445,266,139 sites across 233,886,577 unique domain names and 8,613,630 web-facing computers. This reflects a loss of 16.8 million sites [from previous March 2019 survey]" https://news.netcraft.com/archives/2019/04/22/april-2019-web-server-survey.html)
- "The Indexed Web contains at least 5.22 billion pages" (Tuesday, 30 April, 2019, https://www.worldwidewebsize.com/).

- "The average life span of a Web page is only 44 days, and 44 percent of the Web sites found in 1998 could not be found in 1999. [...] As ubiquitous as the Web seems to be, it is also ephemeral, and much of today's Web will have disappeared by tomorrow." (Lyman, 2002 p. 38)
- "40% of the material on the Internet disappears within a year, while another 40% has been changed, which is why today we can only expect to find 20% of the material that was on the Internet one year ago." (Brügger, 2005 p. 15)
- "We now know that Web pages only last about 100 days on average before they change or disappear." (Kahle, 2015)
- In 2013, the average life span of a URL is 9.3 years (Musiani at al., 2019, https://books.openedition.org/oep/8743)
- In 2019, according to the Wayback Machine team the life span of a Web page is 92 days

Many reasons for Web content disappearance

The New York Times

In Supreme Court Opinions, Web Links to Nowhere

By Adam Liptak

Sept. 23, 2013



WASHINGTON — Supreme Court opinions have come down with a bad case of link rot. According to <u>a new study</u>, 49 percent of the hyperlinks in Supreme Court decisions no longer work.

This can sometimes be amusing. A link in <u>a 2011 Supreme Court</u> <u>opinion</u> about violent video games by Justice Samuel A. Alito Jr. now leads to a mischievous error message.

"Aren't you glad you didn't cite to this Web page?" it asks. "If you had, like Justice Alito did, the original content would have long since disappeared and someone else might have come along and purchased the domain in order to make a comment about the transience of linked information in the Internet age."



https://www.theguardian.com/politics/2013/nov/13/conservative-party-archive-speeches-internet

https://www.nytimes.com/2013/09/24/us/politics/in-supreme-court-opinions-clicks-that-lead-nowhere.html

A problem for research and scholarly communication

- Error 404, Broken links, Link rot, Reference rot, Infosuicide, digital ruins, content drift, zombie media,...
- Shut down & take down, mergers and acquisitions:

On March 18, 2019, it was revealed that MySpace lost all of their user content from 2016 and earlier in "a server migration gone wrong". It was widely reported that over 50 million songs and 12 years worth of content was permanently lost, and there was no backup (https://en.wikipedia.org/wiki/Myspace)

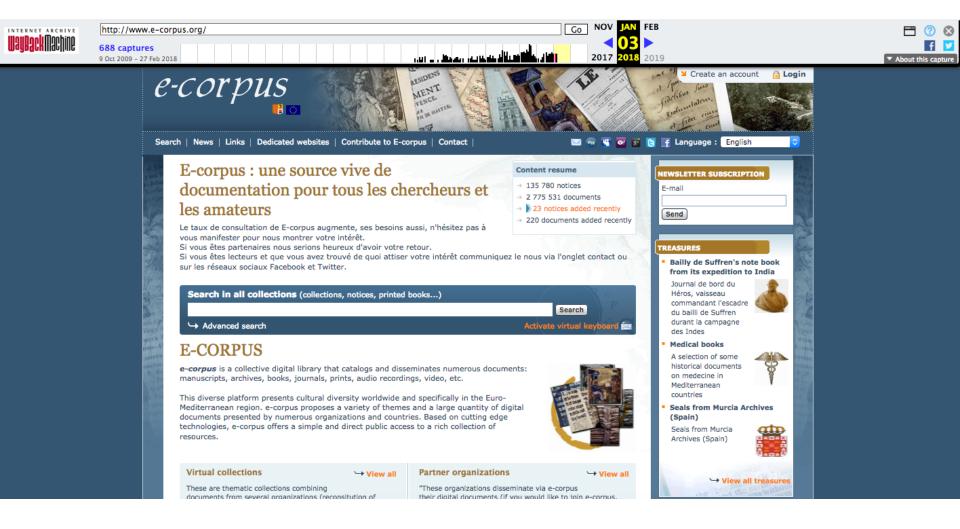
History :

- Yougoslavia (.yu) breakup (now Serbia and Montenegro, .rs and .me)
- Czechoslovakia (.cs) dissolution (now Czech Republic and Slovakia, .cz and .sk)
- Reference rot, a combination of:
 - **Content decay**: The content of the linked resource may change over time and, as a result, the degree to which that content remains representative of the content that was intended to be linked to may decrease over time.
- Link rot: The linked resource may disappear altogether. (Thoughts on Referencing, Linking, Reference Rot http://mementoweb.org/missing-link/)
- The integrity of research is at risk! (James G. Neal, http://library.ifla.org/id/eprint/907)

Questions

- What is your interest in Web archiving?
- Did you ever experience a Web content loss?
- What is your experience in Web archiving?

E-corpus 2009-2016



- To maintain our digital cultural heritage
- To stabilize and preserve web materials as a research object
- To be able to document and illustrate claims based on analyses of web materials (whether the web itself is the research object or a source of knowledge about other research objects).

Nielsen, J. (2016). *Using web archives in research: an introduction*. Retrieved from http://www.worldcat.org/oclc/960018046 p. 7

- Web archiving is the process of collecting portions of the World Wide Web, preserving the collections in an archival format, and then serving the archives for access and use. (IIPC Web site, http://netpreserve.org/web-archiving/)
- "Web archiving is the process of gathering up data that has been recorded on the World Wide Web, storing it, ensuring the data is preserved in an archive, and making the collected data available for future research." (Niu, J. (2012). An Overview of Web Archiving. *D-Lib Magazine*, 18 (3/4). https://doi.org/10.1045/march2012-niu1)

A short chronology of Web archives

- **1537** Legal deposit in France (1619 Spain, 1710 United Kingdom)
- 1989 The World Wide Web was invented by Tim Berners-Lee
- 1996 Internet Archive is founded by Brewster Kahle
- 1996 Kulturarw3 in Sweden for archiving the .se top level domain name
- 1998 Google is launched
- **2001** The Wayback Machine (Internet Archive)
- 2003 UNESCO Charter on the Preservation of Digital Heritage
- 2003 the International Internet Preservation Consortium is formally chartered at the
- National Library of France with 12 participating institution
- **2005** Youtube is launched
- 2006 [The] Facebook and Twitter are launched
- 2006 National Library of France is in charge of collecting and preserving the
- "French Internet" (new French Copyright Law) alongside with the National
- Audiovisual Institute (Ina)
- 2013 EU Web Archive

Different strategies & methods for Web archiving

- Macro archiving
- Micro archiving
- Thematic or selective archiving
- Bulk or snapshot harvesting, or broad crawls
- "Exhaustivity" of a National domain name archiving (.se in Sweden)
- Event and 'real-time' institutional archiving (after 2015 terrorist attacks and Notre Dame fire in 2019 France)
- Shared archiving among institutions (in France btwn BnF and Ina)

• ...



Abonné

Dépôt légal web BnF

@DLwebBnF

Different ways of accessing Web archives

Finnish Web Archive (since 2006)
 https://www.kansalliskirjasto.fi/en/collections-and-content-online#finnish-web-archive

The contents of the archive can be only accessed from special legal deposit workstations that are available in selected libraries within Finland (including The National Library of Finland).

- Portugal (since 2008) accessible in Open Access at <u>Arquivo.pt</u>
- The Wayback Machine (since 2006) accessible in Open Access at https://archive.org/web/

There is a lot of different types of Web archives

As much as for other kind of archives, one must know the history of a Web archive and how it was constructed to better understand it and use it in research work. What you see is a reconstruction, not a copy of the site

- "What is harvested is both a point in time (the time of harvesting) and a period of time (the period up to the time of harvesting)." (Brügger, 2008 p. 158)
- "On the one hand the archive does not look like the internet as it actually was in the past (we have lost something), but on the other hand the archive might look like the internet as it never was in the past (we get something different)." (Brügger, 2001 p. 6)

Web archiving projects often needs to gather diverse and multiples expertises and skills: archivists and librarians, researchers, legal officers, IT and computer specialists and... users and stakeholders

Legal and ethical issues

As for any other kind of archives one must act lawfully and ethically when archiving and using Web archives:

- The materials in the web archives are protected by copyright law as they were on the live web
- There is "tensions around the archival principles of preserving the public record vs the individual's expectation of the right to be forgotten" (http://netpreserve.org/ga2018/programme/abstracts/#paper21)
- The processing of personal data is submitted to laws and even more to the research project ethics
- New laws to take into account ex. General Data Protection Regulation (GDPR, https://gdpr-info.eu/)

IIPC: International Internet Preservation Consortium









The web is a unique and dynamic resource that is of high value to current and future researchers

Learn about the value of our work



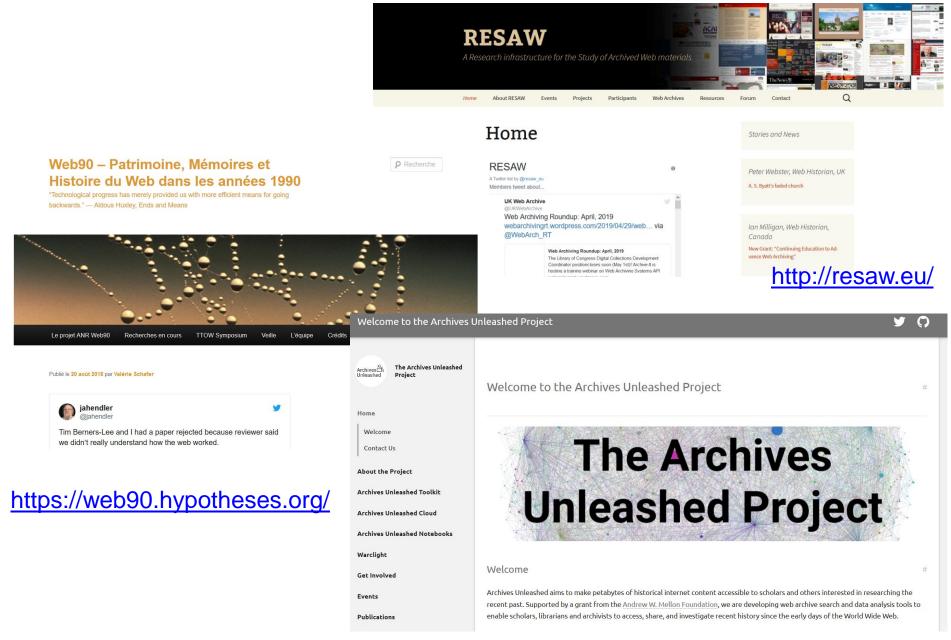
Members are organizations from over 45 countries, including national, university and regional libraries and archives.



IIPC members join working groups that engage in short and long-term projects to advance the practice of web archiving.

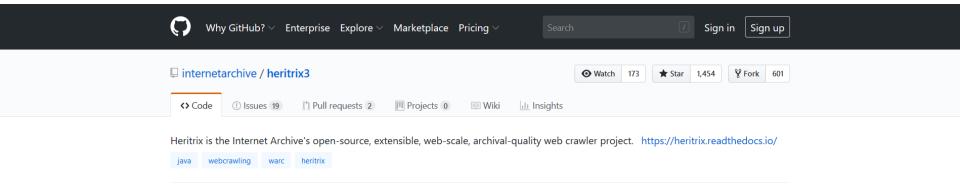


Our community comes together annually to share experiences and present solutions during the Web Archiving Conference and the General Assembly.

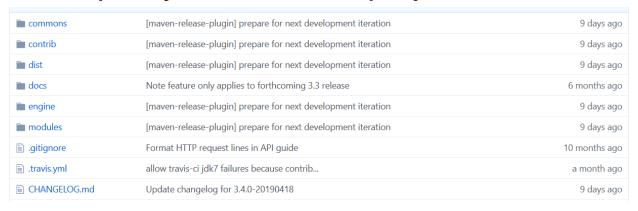


https://archivesunleashed.org/

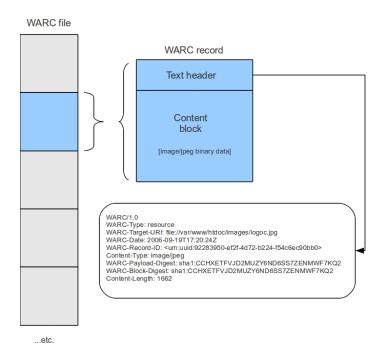
Technologies for Web archiving: Heritrix and many other tools



Heritrix is the Internet Archive's open-source, extensible, webscale, archival-quality web crawler project



- WARC file format = Web ARChive archive format
- ARC was accepted as an international standard in 2009 (ISO 28500:2009)
- WARC is now recognised by most national library systems as the standard to follow for web archival



https://en.wikipedia.org/wiki/Web_ARChive

https://wiki.archivematica.org/Significant_characteristics_of_websites

https://wiki.archivematica.org/File:WARCdiagram.png

Challenges and setbacks in Web archiving

- Robots.txt
- Captcha (ie Completely Automated Public Turing-test to tell Computers and Humans Apart)
- User interaction needed
- Password protected content
- Technologies and dynamic content: Flash, java scripts,...
- Distant content
- Temporal inconsistencies
- Bot traps

• . . .

- Define a strategy
- Use a log and write throughout the life of the project
- You may need to use additional methods and tools
- Screen capture and screen recording
- Link crawling
- On demand archiving
- We will practice:
 - The Wayback machine
 - Web recorder
 - Archive IT

URL: Uniform Resource Locator

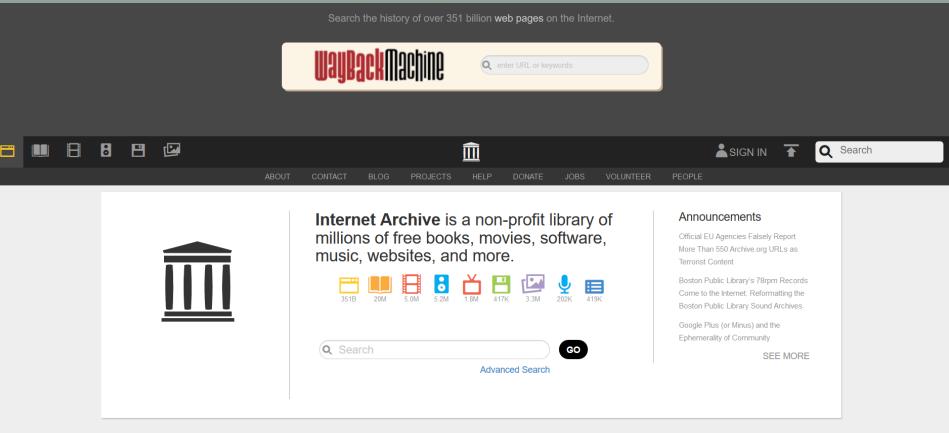
The structure of URLs on the World Wide Web (www):

protocol://subdomain.domain.top-level domain/path/page/

Ex:

https://dhibeirut.wordpress.com/archive/dhi-b-2017/

Internet Archive's Wayback Machine



Terms of Service Dec 31, 2014

- Launched in 2001
- 357 billion archived <u>Web pages</u> so far
- Archived content going back to 1996

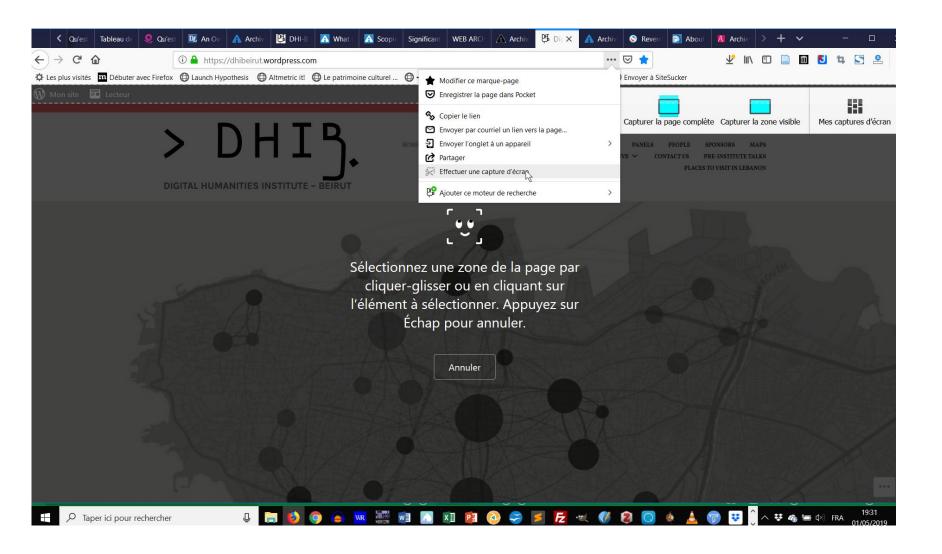
Structure of URLs in the Internet Archive's Wayback Machine:

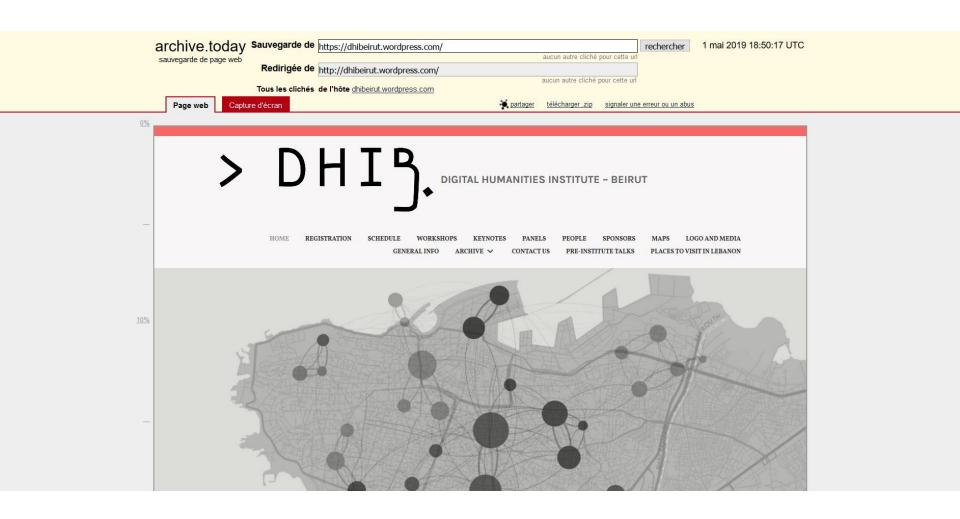
Wayback Machine URL/collection/ time shown as yyyymmddhhmmss/URL

Ex:

https://web.archive.org/web/19980118071158/http://www.aub.edu.lb/

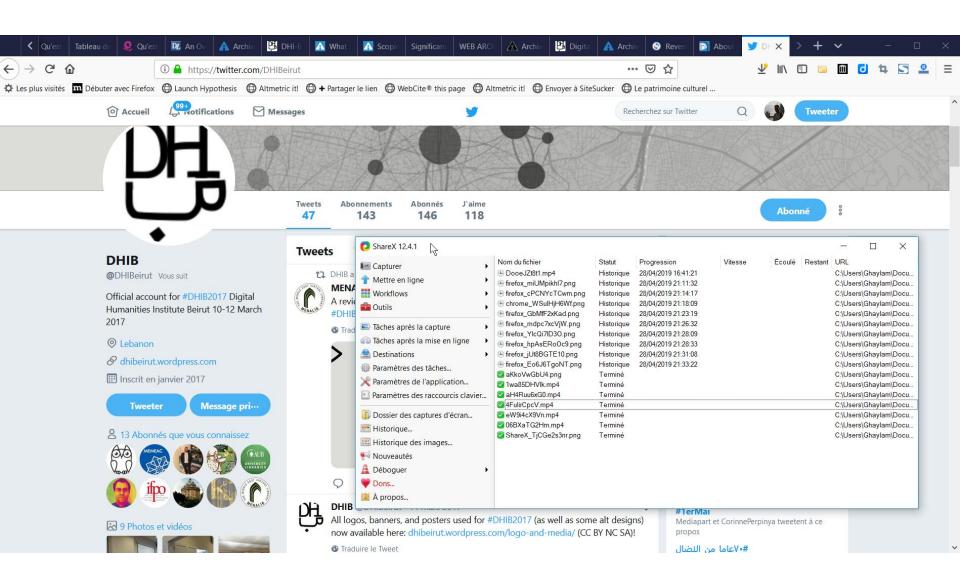
Screen capture with Firefox





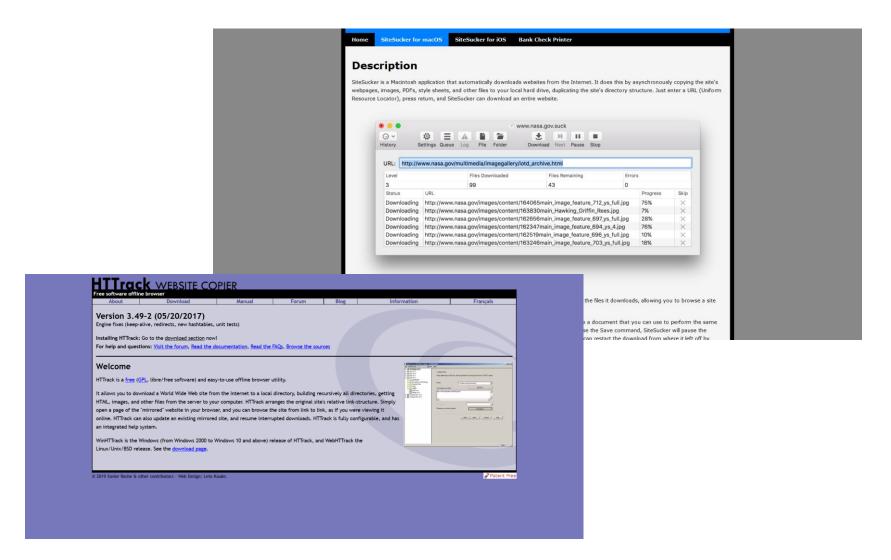


Screen recording with ShareX (Win) / QuickTime (Mac OS)



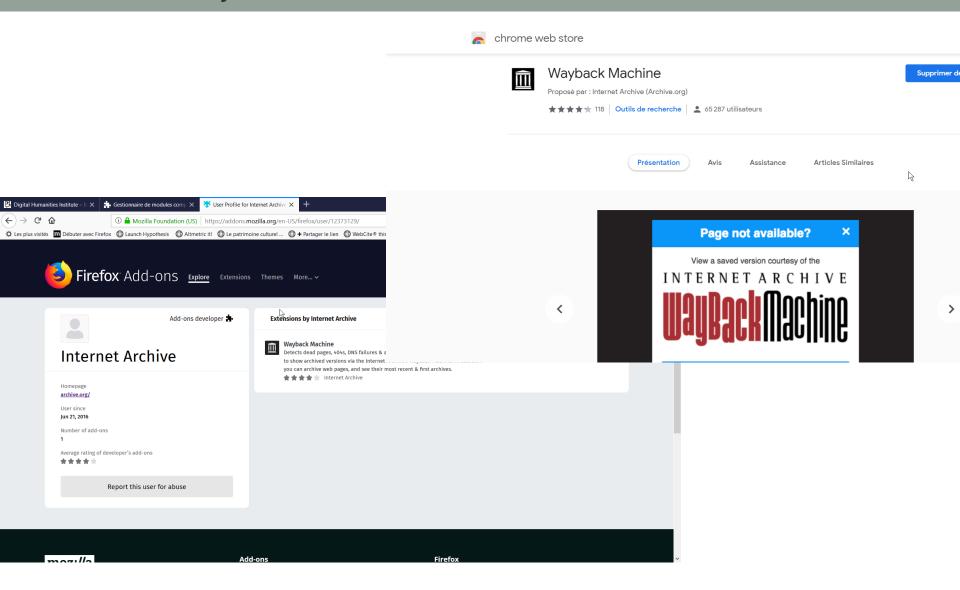
https://github.com/ShareX/ShareX

Link crawling with HTTrack (Win) / SiteSucker (Mac OS)



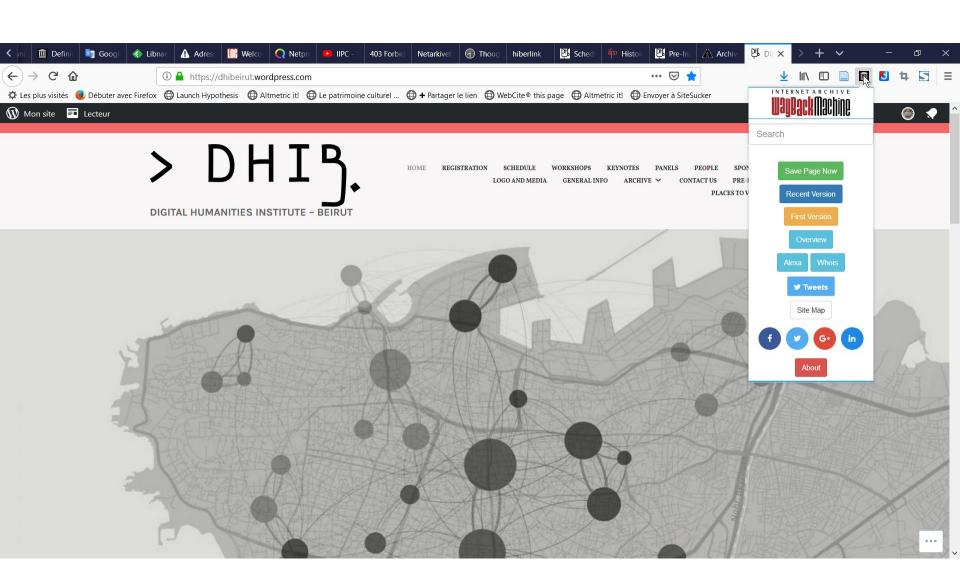
http://ricks-apps.com/ https://www.httrack.com/

Internet Archive / Wayback Machine extension for browsers

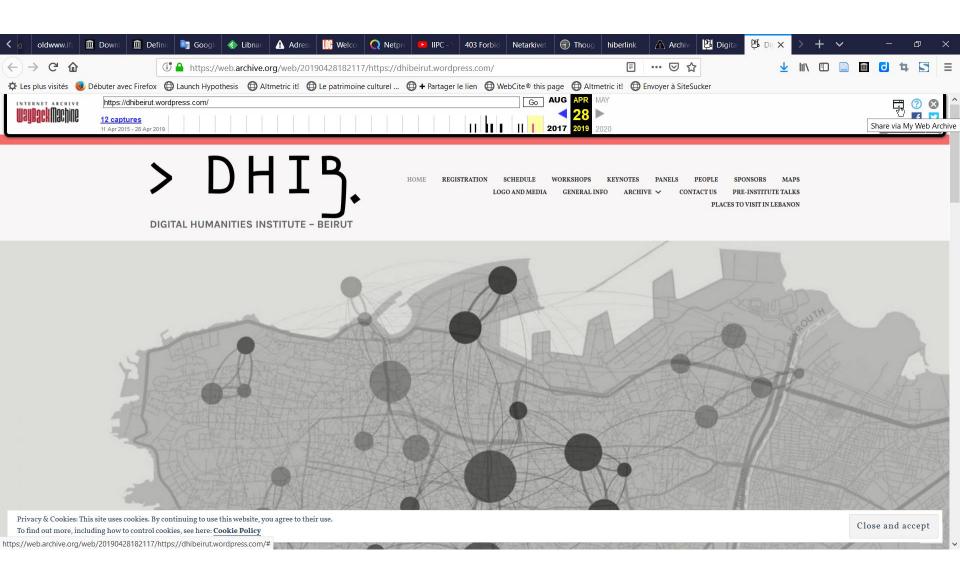


https://chrome.google.com/webstore/detail/wayback-machine/fpnmgdkabkmnadcjpehmlllkndpkmiak?hl=fr https://addons.mozilla.org/en-US/firefox/user/12373129/

Internet Archive / Wayback Machine extension for browsers

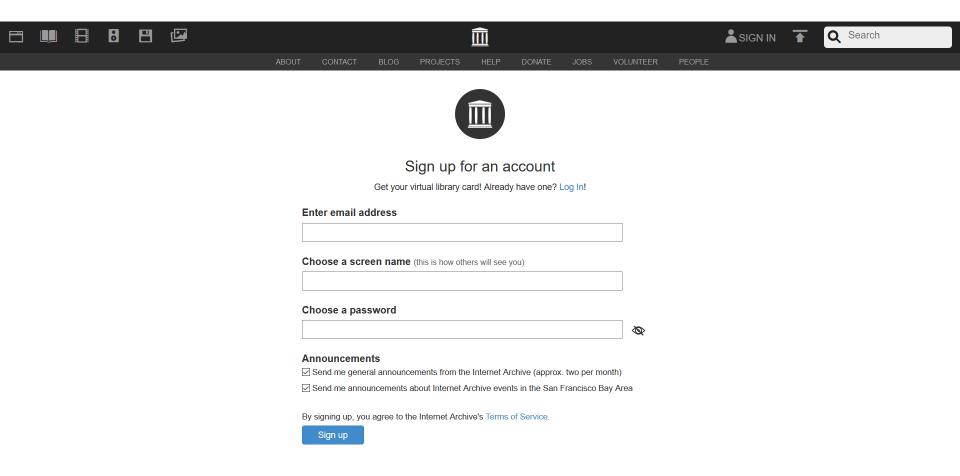


Internet Archive / Wayback Machine extension for browsers



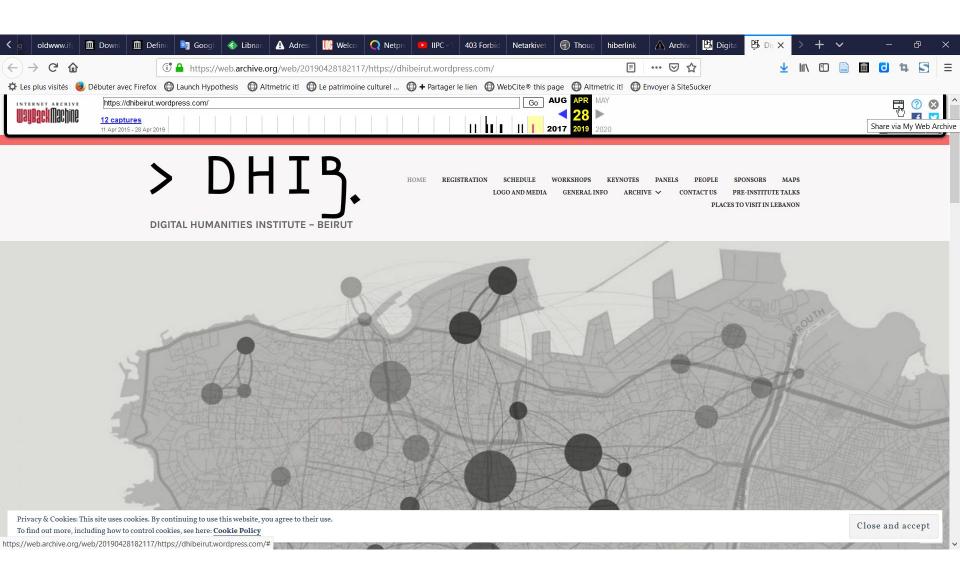
https://web.archive.org/web/20190428182117/https://dhibeirut.wordpress.com/

Your own collection of archived Web pages in Internet Archive

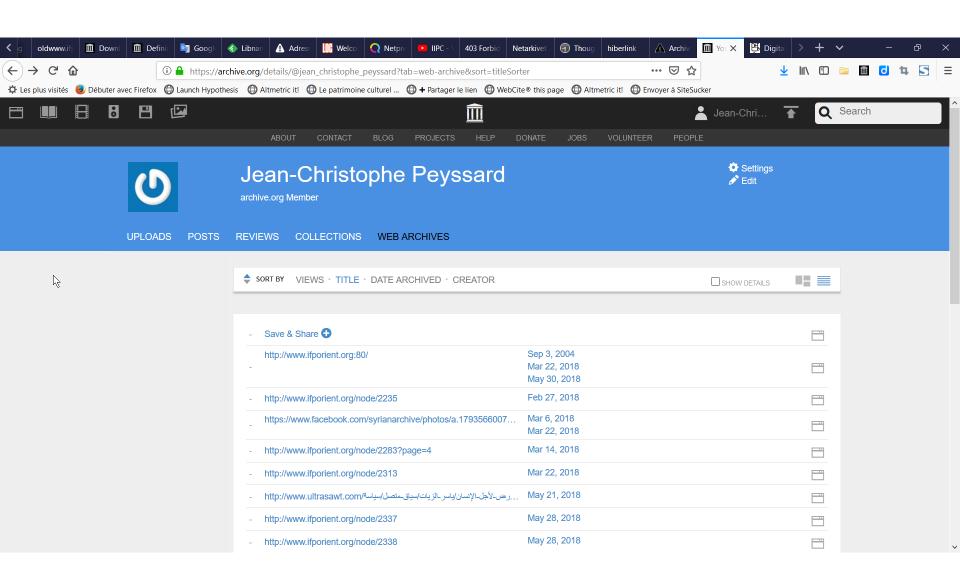


https://archive.org/account/signup

Your own collection of archived Web pages in Internet Archive



Your own collection of archived Web pages in Internet Archive

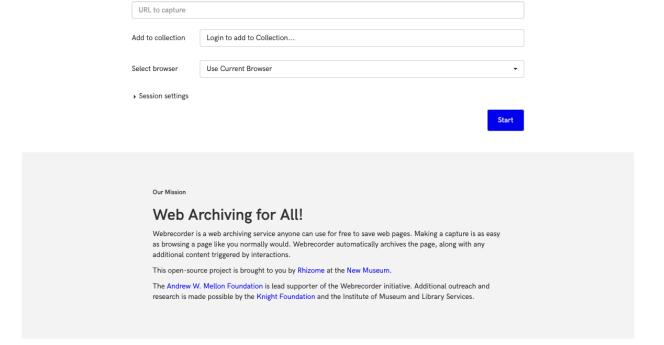


Archiving complete Web sites with Webrecorder

MR About Report Bug Help Sign Up Login

Webrecorder

Collect & Revisit the Web

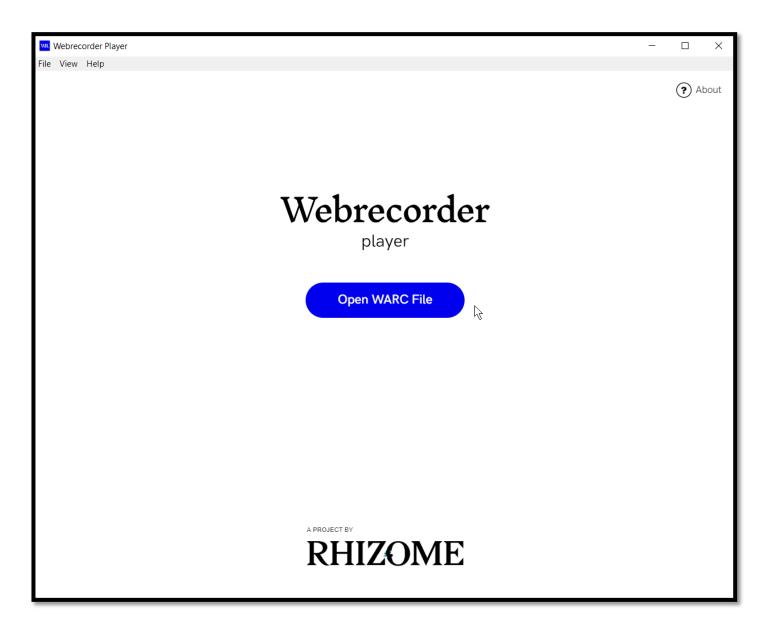




Online Now ≠ Online Tomorrow

Links break. Services disappear and redesigns happen. The web is ephemeral. Make sure that what's important to you will stay available.

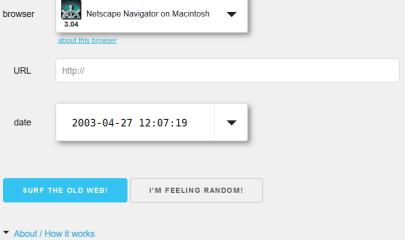
Playing back WARC files with Webrecorder playe



https://github.com/webrecorder/webrecorder-player

Rendering Web archives the old-fashioned way with oldweb.today

oldweb.today



oldweb.today is built with open source tools:

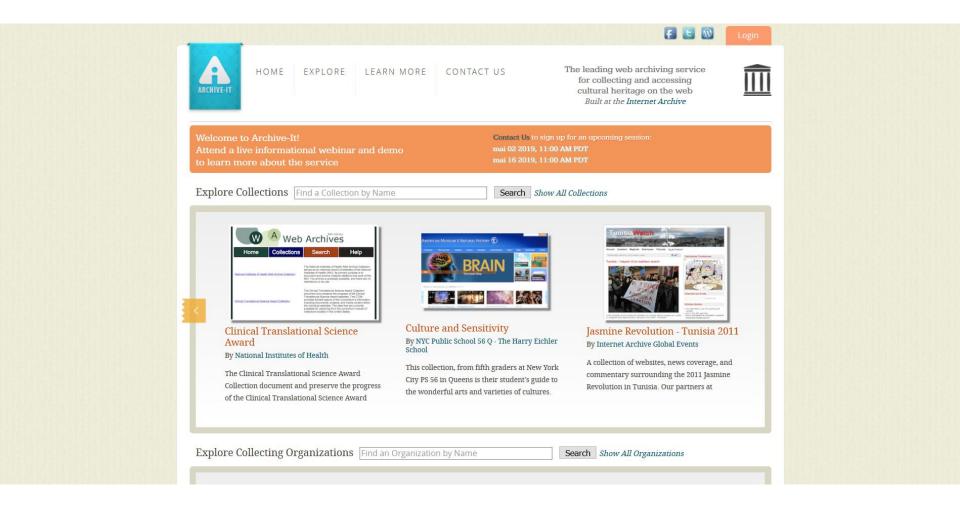
- Docker containers to manage user sessions and scale across machines.

- Wine, Basilisk and Sheepshaver and Previous emulators are used to run old browsers on legacy platforms.
- pywb is used as the web archive replay proxy system.
- noVNC provides VNC support in HTML over Websockets.
- The Memento Web API and MemGator are used to communicate with web archives.
- Random page list compiled with help from @muffinista

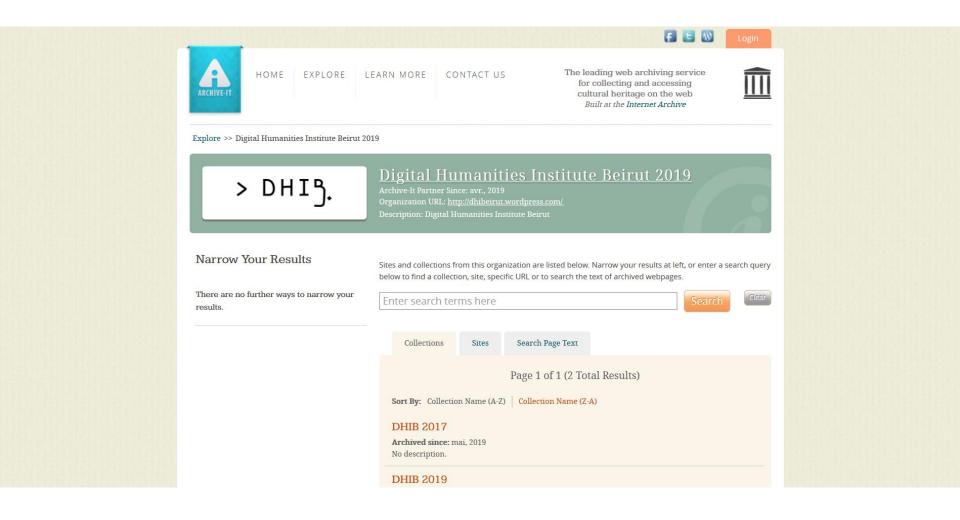
Full source code available on Github.

The archived web pages are available courtesv of these public web archives:

Archive-It: a service for collecting and accessing Web archives

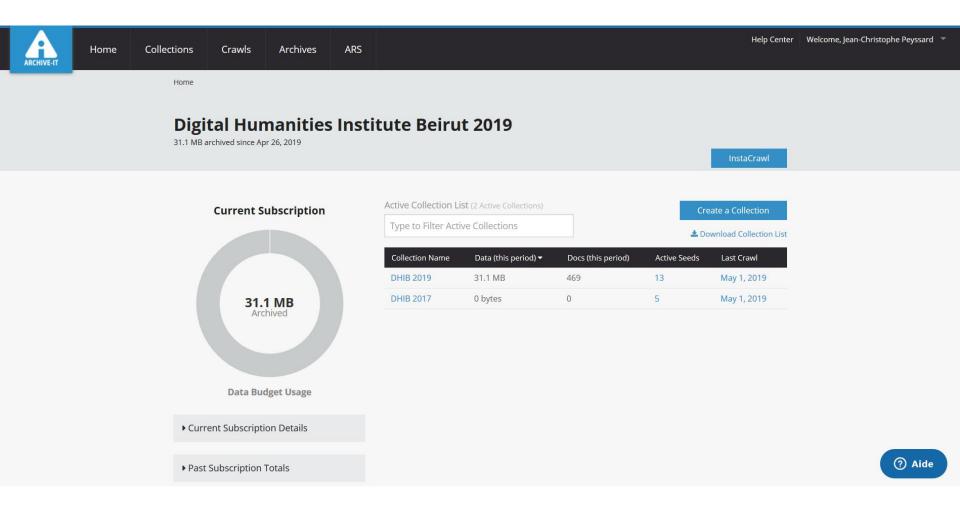


Archive-It: project public collection



https://archive-it.org/home/dhib

Archive-It: the archving back office user interface



Archive-It: example of an archived Web page

You are viewing an archived web page, collected at the request of <u>Digital Humanities Institute Beirut 2019</u> using <u>Archive-It</u>. This page was captured on 12:20:14 mai 01, 2019, and is part of the <u>DHIB 2017</u> collection. The information on this web page may be out of date. See <u>All versions</u> of this archived page. <u>Metadata</u>

Enable QA

7 hide

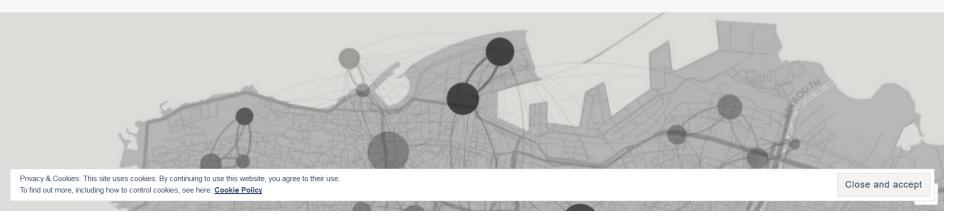


HOME REGISTRATION SCHEDULE WORKSHOPS KEYNOTES

PANELS PEOPLE SPONSORS MAPS LOGO AND MEDIA

GENERAL INFO ARCHIVE
CONTACT US PRE-INSTITUTE TALKS

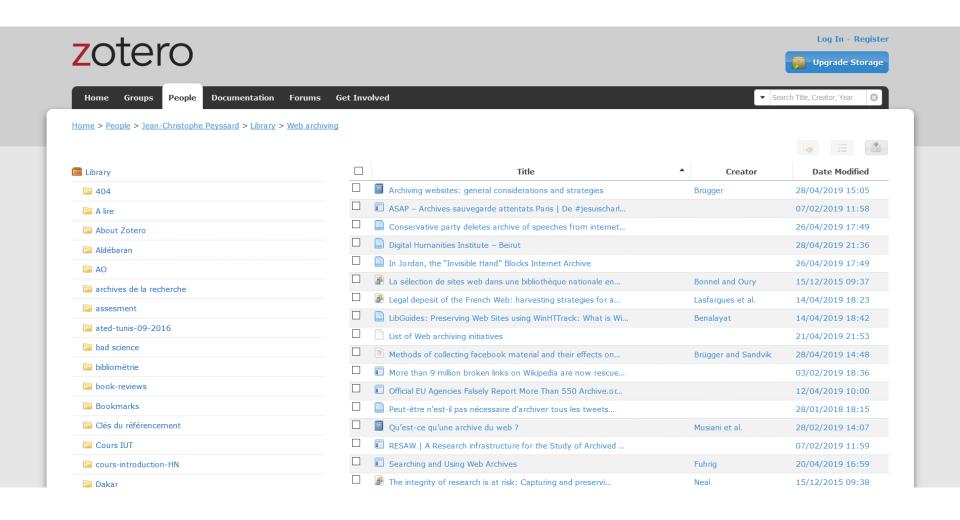
PLACES TO VISIT IN LEBANON



https://wayback.archive-

it.org/12102/20190501122014/https://dhibeirut.wordpress.com/archive/dhi-b-2017/

Bibliography



https://www.zotero.org/peyssard/items/collectionKey/CNGX47Z3

شكراً / Thank you / Merci

> DHIB. 2019

jc.peyssard@ifporient.org









